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Industrial FINISHING

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SEPTEMBER, 1948
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★

Distributed monthly to finishing room and paint shop foremen, production superintendents, chemists, purchasing agents and company executives of metal-working, woodworking and miscellaneous industrial plants where production cleaning and finishing are major operations in parts and products manufacture.

★

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24 TWENTY-FOURTH YEAR OF PUBLICATION

Salesmanship. At a recent meeting of the National Federation of Sales Executives in New York, Frank Head, co-chairman of the sessions, made a few remarks which deserve close attention by all business and industry.

"Easy days of marketing, where anything would sell are over. The public has become brand concious, quality conscious and discriminating in buying. Managements everywhere are facing the biggest problems they have ever had, to meet public demands."

Mr. Head also pointed out that there is a crying need for improvement, for "last year salesmanship was at the lowest ebb of many years.

* * *

Advance Buying. According to the National Association of Display Industries which held a show recently in New York, there seems to be a definite trend among buyers to start fall and Christmas campaigns two weeks earlier than previous years. Autumn is just around the corner and seasonal items especially will be in earlier demand. Displays this year will be more lavish and more realistic. It is said talking mannequins and life size children groups will be used to promote sales.

* * *

Coating For Aluminum. A plastic that makes aluminum impervious to ultra violet rays, acids and salt spray, has been developed. Based upon laboratory tests thus far, it is said to be a remarkable coating for aluminum. Further tests are in progress in weatherometers and cold rooms to determine what effect high heat and cold as low as 75° F. below zero will have on the coating.

* * *

Big & Little Business—Both needed on the American scene. At a meeting in Chattanooga recently, Henry B. du Pont, vice president of E. I. du Pont de Nemours & Co., said:

"There is nothing incompatable or antagonistic between big and little business; both are fundamental to the American competitive system."

Costly development of products is big business' share, while distribution and sales work by small business is indispensible. Each is dependent on the other. Lets keep it that way.

* * *

More Aluminum. The aluminum industry is more than twice as big as most observers predicted when the war ended. But it is becoming more obvious every day that it is not big enough. Shipments are now more than two billion pounds a year but the industry's customers want more.

The aviation industry and the armed forces have thus far taken comparatively little aluminum since the end of the war. Consequently, the current record-breaking shipments are going into markets developed within the past two years or into uses which existed before the

LET'S "FINISH" in '48 . . . . . .

Dr. O'Finish Prescribes

Rx

1 Dolan's FASTAIN
2 Dolan's FULL-FILL
3 Dolan's WOOD-SEAL
4 Dolan's SEAL LACQUER

Directions—Use above daily, in order prescribed, to obtain complete relief promptly from all FINISHING ailments.

V. J. DOLAN & COMPANY, Inc.

Manufacturers of "Unquestionable Quality" INDUSTRIAL FINISHES
Lacquers . Sealers . Synthetics . Stains . Fillers . Bleaches
1828 N. Laramie Ave. • Berkshire 0100 • Chicago 39, Illinois

"hot"

LACQUER

saves materials, time and labor

One coat of SIMAX lacquer, the "original" hot lacquer formulated specifically for heating, does the work of two coats of cold lacquer, saving material, time and labor.

SIMAX hot lacquer has body equal to varnish, and produces an exceptionally tough film with great durability. When heated it sprays on easily, has greater flow and better flow.

SIMAX

THE FINISH THAT LASTS

Originators of "hot" lacquers, Wabash Products Company now offers improved materials formulated to meet today's requirements. Let us demonstrate!

WABASH PRODUCTS COMPANY

Lacquers • Enamels • Sealers • Stains Fillers • Varnishes • Thinners Synthetics • Wrinkles

16th and Hulman Streets
Terre Haute, Indiana

war. The average consumption before the war (1936-39) was 320,000,000-lbs. Today's shipments are more than seven times as large and 1947 shipments were six times as great as the pre-war average.

* * *

Fire, Fire. Fires, nearly all of which could have been prevented by simple acts of caution, cost the nation $55,000,000 in property loss during June, latest month for which figures are available.

This was an increase of 7½% over June 1947, indicating that fire losses are still going up. After a slight decrease in April, the upward trend was resumed in May.

For the first six months of 1948, fire waste in the U. S. totalled $386,480,000 which exceeds by several million dollars the fire loss for the entire year of 1943.

To save lives and resources from fire, one of the most extensive nation-wide advertising campaigns yet undertaken by the N.B.F.U. has been launched. The campaign will bring the menace of fire forcefully to the attention of millions of people.

* * *

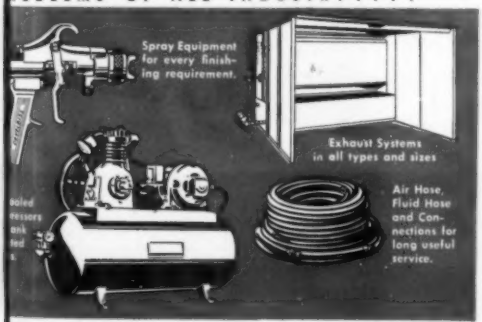
Fire-Resistant. New window shades that are fire-resistant, washable, sunproof and scrubbable are made possible through the development of a new shade cloth coated with Vinylite resins. The new type shades are available for homes and public buildings and recognized by insurance companies as a deterrent to fires, particularly in the home.

* * *

Chemical Exposition. Latest developments, discoveries and applications in industrial chemistry will be disclosed October 12 to 16, when the Chicago Section of the American Chemical Society holds its fifth Na-

(Continued on page 88)

COMPLETE DEVILBISS LINE
TO SOLVE THE EXACTING FINISHING PROBLEMS OF ALL INDUSTRY . . . .


Spray Equipment for every finishing requirement.
Exhaust Systems in all types and sizes
Air Hose, Fluid Hose and Connections for long useful service.

eans **Quality** *in all four . .*

SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS

DEVILBISS HINTS . . . on *Finer Finishing*

AIR COMPRESSORS

Proper performance of the air compressor that powers your spray guns begins with the choice of its installation site. There is a tendency to tuck the compressor away in a remote and often littered corner and to forget it until it eventually breaks down.

Check compressor location. It should be set up and levelled in a spot where it can receive cool, clean, dry air, and then it should be lagged to a cement base. A damp location will contribute to wear and tear on the unit generally and results in humid air reaching the spray gun. A clean place, of course, promotes general maintenance. Dirty air will clog the intake filters, foul the valves, lower the air output, and eventually contaminate the finish. It is advisable to place a hooded intake outside the building for proper air supply. Cool air helps to make the operation efficient.

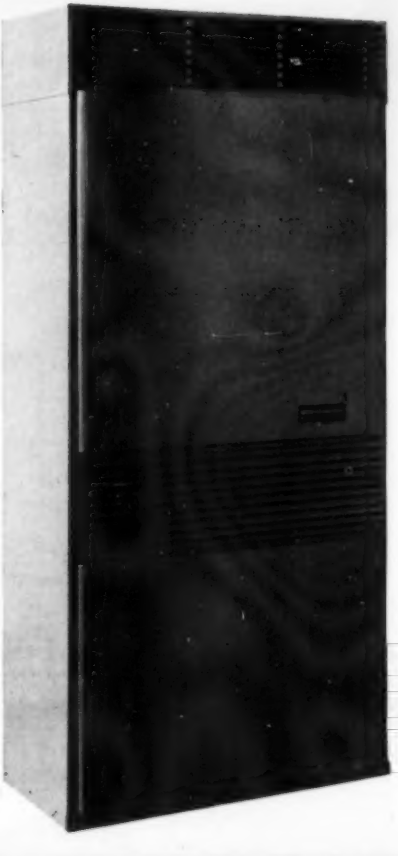
Placing the flywheel next to the wall is a good safety precaution. It should not be so close to the wall, however, that interference with either motor air cooling or easy inspection is possible.

Compressing air raises its temperature and as the air cools, moisture in it condenses. Therefore, if your air receiver or storage tank is not drained daily it may turn into a water tank. Check it daily. Water robs it of its air storage capacity, contaminates your air supply and may eventually rust and weaken the structure of your tank. Automatic drains are available to eliminate the human factor in forgetting daily draining of oil and water from the tank.

The air compressor is a mechanism which demands oiling just as an automobile. Check lubrication. Follow the manufacturer's printed recommendations for oil and its change. A common fault is to use too much oil. The correct amount can be determined by regular examination of the oil level gauge.

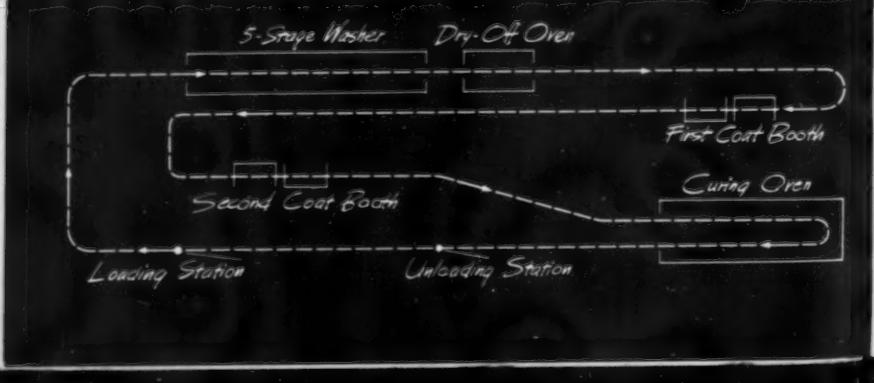
The electric motor on the compressor should be lubricated regularly according to the manufacturer's specifications. Keep a spare set of valves on hand and replace them when they become warped, broken, or badly carboned.

Next in importance to placing the compressor in a suitable spot is placing it on a maintenance schedule in which it will be regularly inspected and attended. A maintenance card fastened to the compressor facilitates this program. A little preventive maintenance is worth while in dollars and cents in saving of time and equipment.



Worthington air conditioner in attractive metal cabinet.

Floor plan of conveyor line and facilities for cleaning, spray painting and baking.



a Finish that solved our Corrosion Problem

BY J. NEUHOFF

Chief Engineer of Worthington Pump & Machinery Corp's. Air Conditioning & Refrigeration Division, Holyoke Works, tells how a tested protective finish solved the corrosion problem on all of his firm's products.

IN PRODUCING air handling equipment—which includes both air conditioning and refrigeration — far more engineering and research are involved than that required to design and insure efficient operation. To give long and durable service, the outside metal case, and especially the inner vitals of air conditioning and refrigeration systems, must be protected from corrosion.

So that you may know the magnitude of the corrosion problem presented by this equipment, let us consider just a few of the units in connection with some of the elements which cause corrosive action. In commercial and industrial air conditioners the water condensed from the air is the corrosive agent.

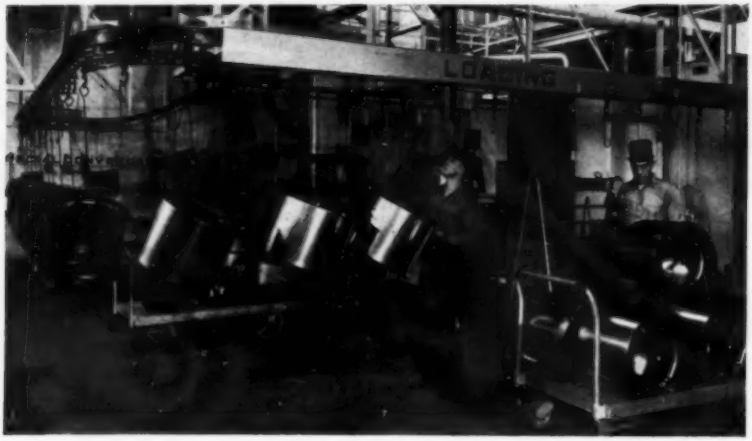
Brine Spray; Water; Dust; Fumes

In refrigeration equipment such as brine spray product coolers (in cold storage plants) using sodium chloride, calcium chloride or propylene glycol to prevent frosting, the brine is intensely corrosive.

Evaporative condensers and coolers are subjected to recirculated water spray, with water temperatures from 130° to 140° F.—with air passing through continuously, where the water, dust and fume laden air form a corrosive combination. Added to this, in these units, is the encrustation of lime which accumulates due to the use of hard water. This must be removed two or three times a year by spraying with hydrochloric acid. All of this presents a real problem of corrosion.

Variation in Temperatures; Outdoor Exposure

Both heat and cold must be taken into consideration in connection with this equipment. Air conditioners and unit heaters must stand a temperature of 200° to 250° F.



Loading fan housings on overhead conveyor which carries them through a 5-stage washer.

non-operating, and 160° F. operating. Low-temperature product coolers must withstand a temperature range from zero to minus 40° F., and lower.

This equipment is used all over the world, in all sorts of climates, and under every conceivable condition on land and sea—all of which means that the metal must be protected from both operational corrosive action and that of the natural elements, such as sun, rain, snow, dust, fumes and salt air.

Research Found the Right Finish

Sample panels were coated with the best protective finishes obtainable from nearly all of the leading manufacturers of protective coatings. These surface coatings included various materials made of natural and synthetic resins, hot dipped galvanizing, and other materials. They were applied over different forms of surface treatment and then were tested for long periods of time under accelerated conditions.

The finishes under test were checked for resistance to salt fog, humidity, water, ultra-violet light, outdoor exposure, acids, alkali, resistance to chipping, resistance to under film corrosion, flexibility, and resistance to high and low temperatures, in addition to other tests.

One of the most severe tests from the corrosion point of view is exposure to salt fog, where samples are suspended in an atmosphere containing a 20% salt fog at 95° F. Normally, a finish that will withstand 168 hours (one week) is considered good, but the finishing system which we finally selected was one that withstood almost a year's exposure in the test cabinet, and which lasted at least

this *is* worth buying!

WHEN you order Oakite Composition No. 97 for machine precleaning of metals—OR Oakite Composition No. 24 for tank cleaning—OR Oakite Composition No. 90 for electrocleaning with reverse current—OR Oakite CrysCoat No. 87 for phosphate treatment before painting—OR Oakite Pickle Control No. 3 for inhibiting hot sulphuric acid pickling baths—you buy a lot more than a good solvent or alkaline or acidic material.

What you actually buy is OAKITE SERVICE, which combines the chemical and engineering skills of the Oakite Research Laboratory and the Oakite Technical Service Department with the experience of more than 150 Oakite Technical Service Representatives working for tens of thousands of customers every year; backed by a guarantee of nearly 40 years' standing that your particular metal-cleaning job will be done to your complete satisfaction.

See For Yourself: To discover how much SERVICE can be packed into each ounce of cleaning material, just call the Oakite Technical Service Representative in your vicinity. Or write Oakite Products, Inc., 32F Thames St., New York 6, N. Y.

MATERIALS
METHODS
SERVICE

OAKITE

Specialized Industrial Cleaning

three to four times as long as the best hot-dipped galvanizing coating.

The finishing method that we finally selected starts with the base material used. Parts which are normally exposed to heavy moisture conditions, that is, the eliminator section, drip pans and various baffles which are exposed to dripping or actual submergence in water, are made of galvannealed steel. This is a steel with a zinc coating but unlike galvanized steel which has bright slick spangles that appear greasy, galvannealed steel has a dull matte finish and may be welded and painted.

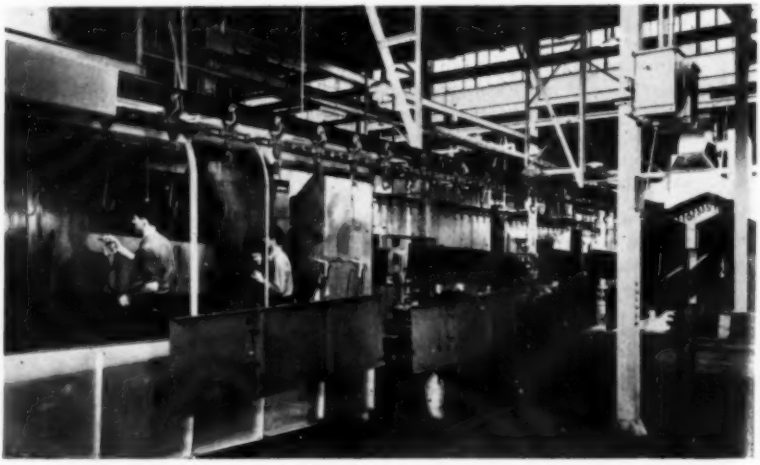
Surface Preparation Before Painting

All parts of all equipment, whether galvannealed steel or ordinary sheet steel, go through the 5-stage washer. In the first stage an emulsion cleaner is sprayed at 150° to 160° F. This is followed by a hot water rinse (130° to 140° F.). Next, Bonderite at 130° to 140° F. Then a cold water rinse and finally a mild chromic acid solution is sprayed at 130° to 140° F.

The surface treated parts are then carried through a direct gas-fired oven where they are dried at a heat of 275° F. Still traveling on the overhead chain conveyor, they cool for 15 minutes.

What the Finish Is; How It Is Applied

Based upon the foregoing tests, the paint which offered the greatest resistance to corrosion, and around which our system is built, is a chlorinated rubber (Parlon) base enamel suitably fortified with resins selected for maximum resistance to acid, alkali and moisture condi-



Spraying C. R. paint on metal panels to protect their surfaces against corrosion.

Bring Your File Up To Date On Metal Finishes

Send for the BLACK BOOK

This portfolio contains latest information on chemical metal finishing processes, corrosion inhibiting coatings, paint bonding and heat treating materials.

BLACKENING PROCESSES FOR METAL

BLACK MAGIC for Steel and Iron
BLACK MAGIC for Zinc, Zinc plate, Zinc die castings and Cadmium Plate
BLACK MAGIC for Copper and its Alloys

PROTECTIVE FILM FINISHES

WITCH DIP, Wax Base Compound
WITCH OIL, Water Displacing Corrosion Inhibiting Oil
FINISH No. 146, Hard Protective Coating and Paint Bond

METAL CLEANERS

BLACK MAGIC Alkali Cleaners for all metal cleaning purposes
BLACK MAGIC Solvent Cleaners (emulsion type)

OTHER MITCHELL-BRADFORD PRODUCTS

BLACK MAGIC Wetting Agents
BLACK MAGIC Acid Inhibitors
QUICK TEMPER TEMPERING AND DRAWING SALTS—275° F. and 420° F. Melting Points
QUICK CARB Liquid Bath Carburizing Salts
"SILCO"—An inorganic, low-temperature bake, vitreous type finish. Rust, acid and abrasion resistant. All colors.
TANKS, Thermometers and Controls
PLATING EQUIPMENT and SUPPLIES

THE MITCHELL-BRADFORD CHEMICAL CO.

2446P MAIN ST. (Stratford) BRIDGEPORT, CONN.

tions. As a further corrosion inhibitor, to each gallon of this material, 4-lbs. of metallic lead paste (ground in oil) is added. To keep the lead in suspension, all pressure tanks are fitted with agitators which operate continuously.

The finishing conveyor is 726-ft. long; it has hangers on 16-in. centers and operates through a variable-speed drive at 5-ft. per minute.

After the sheet metal parts cool, following surface preparation and dry-off, they enter the prime-coat spray booths where chlorinated rubber paint is applied at a viscosity of 65 seconds at 70° F. (measured by a No. 1 Zahn cup) using an atomizing pressure of 60-lbs. and a fluid pressure of 16-lbs. Length of hose is 30-ft. Both the first-coat and second-coat spray booths are of the water-curtain type. They are located in reverse position so that operators can spray each side of parts consecutively.

The first coat is allowed to dry for 30 minutes, traveling on the conveyor before the parts enter the second-coat booths. In the second-coat spray booths all interior parts and inside surfaces are given a spray coat of the same material as the first coat, and it is applied in the same way. Outside surfaces are coated with the same base material, but with the metallic lead powder omitted and a gray-green pigment added for an attractive appearance. This gray-green material is applied at a viscosity of 50 seconds at 70° F. (No. 1 Zahn cup); atomizing pressure is 55-lbs.; fluid pressure 12-lbs.; length of hose, 30-ft.

The second coat is allowed to flash (air dry) for ten minutes before the work enters the hairpin-type oven where the finish is cured for 30 minutes at 250° F. Film thickness of the two coats is 2¾-mills.

The reason chlorinated rubber paint is used on outside surfaces is because of its high resistance to weathering conditions. The film does not become chalky with age. Many industrial installations are located on the roofs of buildings. For instance the large freon and ammonia evaporative condensers are usually installed outdoors on account of their large size and requirements for large quantities of outside air.

Safety; Reminder Matches

The Proctor Electric Co. will use book matches to preach safety both to its employees in the factory and to their families in their homes. Mr. Walter M. Schwartz, Jr., president of the firm, selected The Diamond Match Co.'s 36-match book with outside covers for the campaign. Copy will emphasize the word "safety" but will be changed each three months to point up particular phases of accident prevention. The matches will be distributed through the firm's canteen.

Devoe & Raynolds Takes Over Bishop-Conklin Co.

Elliott S. Phillips, President of DeVoe & Raynolds Co., Inc., 44th St. & First Ave., New York 17, N. Y., announces acquisition of the Bishop-Conklin paint company of Los Angeles, Calif. This acquisition enables DeVoe & Raynolds to service more adequately the tremendous demand for quality paint products on the West Coast.

In addition to enlarging the present production facilities of the Bishop-Conklin Co., a new synthetic resin plant will be constructed. It may be in operation late this fall.

Bishop-Conklin Co. will preserve its identity and operating policies as a separate division of DeVoe & Raynolds Co., with its entire personnel continuing under the guidance of Emerson C. Bishop and William H. Conklin.

eliminates unnecessary expense

During a call at a large plant, a Lowe Brothers "Finishing Specialist" spotted a rust problem on castings. Foresightedness and basic finishing knowledge enabled him to quickly suggest the solution.

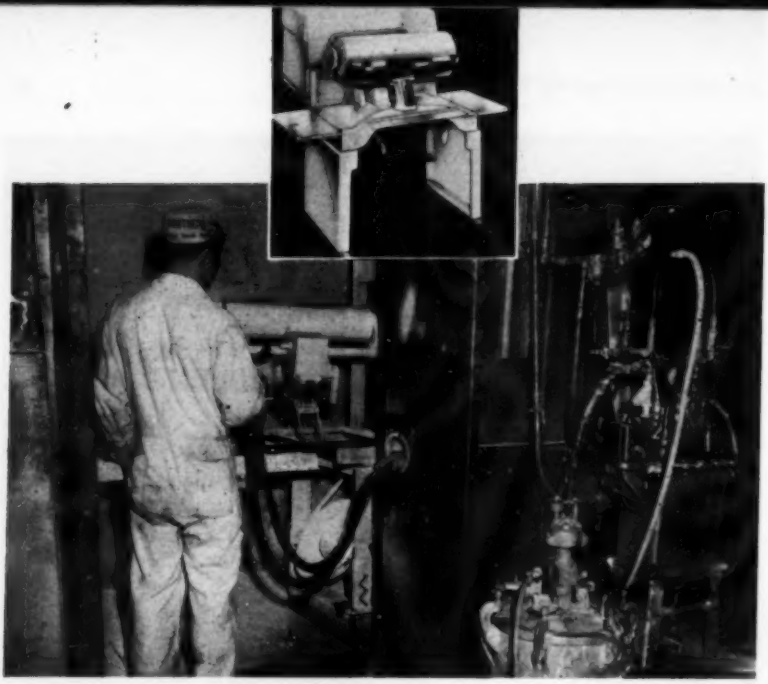
Semi-finished product parts, after being primed, were temporarily stored outside. Frequently rust formed on these parts. Before castings could be completely finished, it was necessary to wire brush and reprime rusty surfaces.

Lowe Brothers "Finishing Specialist" checked the entire spraying operation, made a few minor corrections—then suggested an improved lighting system. Both reconditioning and repriming expenses were eliminated by this *increased illumination*—which enabled the spray man to efficiently put an *even coat* over each casting surface and thereby prevent rusting.

This experience illustrates how the knowledge of a Lowe Brothers "Finishing Specialist" helps him solve finishing problems that may lead to lower finishing costs.

Why not have a Lowe Brothers "Finishing Specialist" study *your* finishing methods for possible improvement? No cost or obligation. Write The Lowe Brothers Company, Dayton, Ohio.

Lowe Brothers
FINISHES FOR INDUSTRY



Operator spraying hot lacquer on frame assembly for ironer. Note hot lacquer equipment with thermostat, agitator and heating unit at right. Lacquer is applied at a temperature of 180° F. The insert picture above shows a typical cabinet model of an Ironite ironer.

Problem: STEP UP PRODUCTION WITHOUT ADDING FLOOR SPACE

By *A. J. LaPlante*

THE problem we faced—and solved has confronted other manufacturers in many different lines. It all started back in reconversion days when there was a wild scramble to get into production as quickly as possible. I suppose we did what came naturally—that is, we placed all of our finishing room equipment, including ovens, on one floor level.

Fabrication soon hit it's stride. There was and still is a big demand for home ironers. As the tempo increased, parts began to accumulate in the finishing room to the point

where we saw that one or two things would have to be done: Either slow down production or expand the finishing room. The first was out of the question, and plant expansion during serious material shortages is slow, costly and generally unsatisfactory.

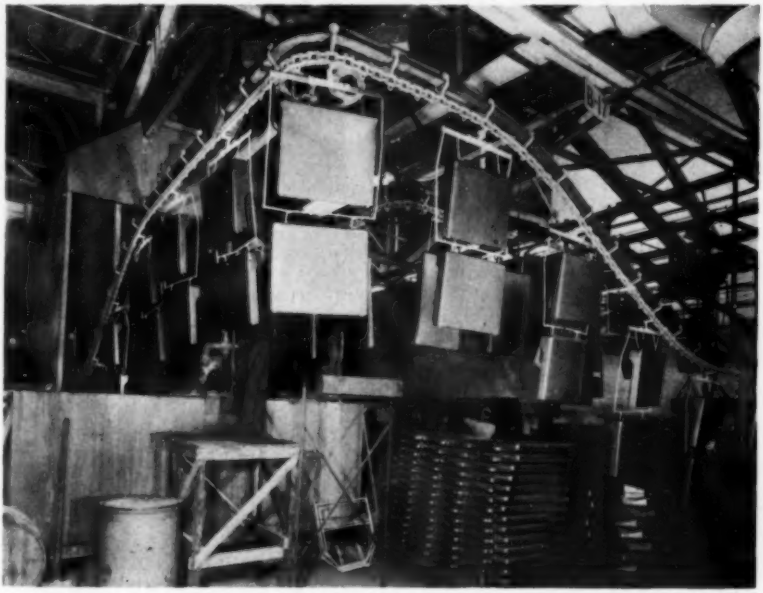
To further complicate our particular problem, the surface preparation of our ironer parts is divided into two distinct classes. The cabinet and base parts may be run through a production washer; but the frame assembly, because of its drive mechanism and fiber gears, must be hand cleaned with mineral spirits.

Elevated Conveyor Oven; More Working Space

The first step in solving the problem was to change the conveyor lines and elevate the baking oven above floor level to provide more working space at floor level. Final solution of our problem may best be explained by describing step by step how the ironers are now finished.

All cabinet and base parts are hung to an overhead chain conveyor which is 700-ft. long, with hangers spaced on 8-in. centers. It operates at a speed of 6-ft. per minute.

The pressed sheet metal parts travel through a dip tank contain-



Metal parts entering cleaning tank at left and leaving hot water rinse in background.

ing a heated emulsion cleaner, with alkali added. The temperature of the cleaning solution is kept at 170° F. Then follows a hot water rinse. Time in washer is 2½ minutes. Next the work passes through an infra-red drying oven for two minutes at 350° F. which provides sufficient drying, as these parts have no crevices or small radius channels.

The clean metal parts cool as they travel toward the pressurized spray room. Just before they enter this spray room they are tack-ragged to remove any particles of dust or lint that may have become attached to their surfaces.

The spray room contains four water-curtain spray booths; these are staggered to permit the first two operators to spray a white synthetic primer on both sides of parts as they pass through by conveyor. Still inside the pressurized room, the primer is allowed to flash (air dry) for 3½ minutes. The next two operators spray the top coat of white synthetic enamel on two sides.

Viscosity of the primer is 26 seconds at 80° F., viscosity of the enamel is 29 seconds at 80° F. (No. 4 Ford cup); tank pressure is 15-lbs.; atomizing pressure, 55-lbs.

As painted parts leave the spray room, they immediately rise to a high-level infra-red tunnel where the finish is baked for six minutes at 350° F. This tunnel has 600 nest-

Inside pressurized spray room, at two staggered booths, where white primer is sprayed. Similar booths are to left (not shown in this picture) where the top coat is sprayed.

A Complete White BUS *"in One Gulp"*

with PRIME and FINISH COATS DRIED in these *Huge* LANLY OVENS

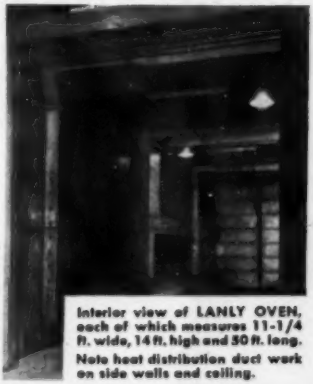
• These LANLY OVENS handle the drying of prime and finish paint coats in keeping with WHITE MOTOR higher standards. Each compartment taking a complete bus "at one gulp."

The efficient operation of the original units at this plant prompted the addition of seven more LANLY OVENS.

Heating is by high pressure steam through air blast finned tube steam coils. The LANLY balanced recirculating air system is employed most effectively.

If you contemplate a future industrial oven installation, LANLY will welcome a discussion with you.

Write *today* for the LANLY CATALOG.



Interior view of LANLY OVEN, each of which measures 11-1/4 ft. wide, 14 ft. high and 30 ft. long. Note heat distribution duct work on side walls and ceiling.

CONSULT US REGARDING • HEAT TREATING OVENS • CORE OVENS
PAINT OVENS • RUBBER CURING OVENS • AIR HEATERS • ETC.

THE LANLY CO.
INDUSTRIAL OVENS

760 PROSPECT AVENUE • CLEVELAND, OHIO

ed infra-red lamps each rated at 250-watts. Upon leaving the baking oven the parts cool as they travel along the conveyor to the assembly lines.

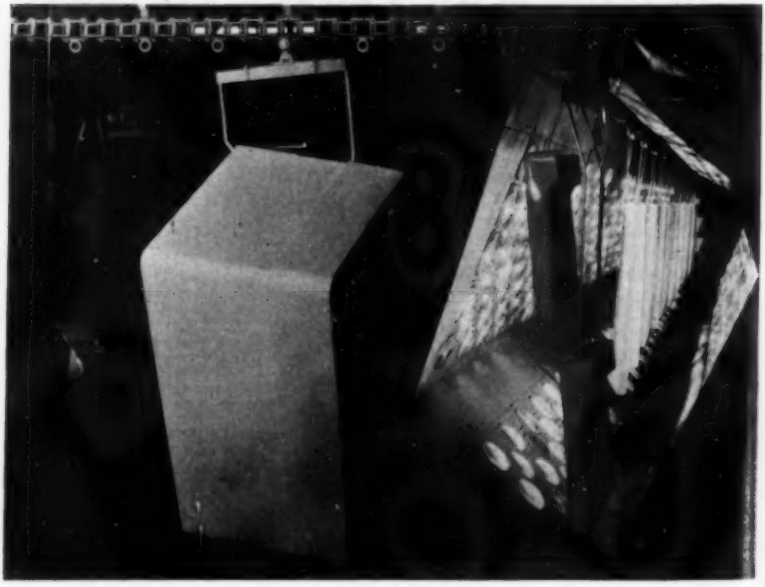
How Frame Assemblies Are Finished

Next came our real finishing problem child—the frame assembly with drive mechanism and fiber gears. For convenient explanation, this is the entire mechanism above the base, including the metal pressure roller which is later covered with padding and cloth. The finish for the frame assembly had to be air dried, yet it had to have sufficient coverage and depth to match the base frame in one model, and the base and cabinet in another model. We solved this problem in the following manner:

Frame assemblies are delivered to the finishing room completely made up. Here they are thoroughly washed with mineral spirits and mounted on a metal frame. Then they travel on a horizontal gravity conveyor to the spray booth where a heavy coat of heated white lacquer is applied.

Hot Lacquer Setup Plus Air Drying

The hot lacquer unit has an agitator and a circulating pump. Heat is supplied by a built-in steam coil



Base and cabinet parts entering the high-level infra-red tunnel where finish is baked.

ON STEEL . . . ALUMINUM
. . . any metals!

specify

SYN-POR

BAKING ENAMELS

- *Surpassing in adhesion — flexibility — impact tests*
- *Superior in color retention — workability — speed of cure*
- *Unaffected by alcohols, fats, greases, household alkalies and acids*

Syn-Por Baking Enamels hold their initial whiteness and color. Their great resistance to marring, adhesion and flexibility on metals has made these enamels FIRST CHOICE wherever usage is severe. That is why they are specified by manufacturers everywhere for kitchen cabinets, lawn furniture, washing machines, office furniture, venetian blinds, bicycles and other products made of metal. If you are a manufacturer of similar products that need a durable, fast-curing enamel of unusual workability, investigate Syn-Por Baking Enamels.

Write for detailed information and sample panel.

Available in White and Any Color.

SYN-POR DURO FINISH

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and is thermostatically controlled to 180° F. Our supplier furnishes this white lacquer at a viscosity of 122-seconds at 70° F. (No. 4 Ford cup). No thinner is added to the lacquer. A tank pressure of 20-lbs. is maintained, and we use an atomizing pressure of 60-lbs.

Inside the spray booth a short detached section of the gravity convey forms a turntable on which assemblies may be revolved to permit easy spraying of fronts, backs and ends. Painted assemblies dry in shop air as they travel on this conveyor to flank the assembly lines where they are mounted on the base or in the cabinet models. The two types of finish must match — and they do.

P.P.G. Paint Div'n. Appoints Technical Directors

Appointment of Richard T. Ubben as technical director and Elmer H. Koll as assistant technical director of the Pittsburgh Plate Glass Co.'s Milwaukee Paint Division has been announced by Dr. W. W. Bauer, technical director of the firm's paint operations.

Mr. Ubben, who succeeds Dr. Bauer in the Milwaukee position, has been associated with the paint industry since his graduation with a B. S. degree from the University of Illinois in 1929.

He had been associated in technical capacities with three other manufacturers of finishing materials before joining Pittsburgh Plate's Newark Paint Division as technical director in 1942. A native of Pekin, Ill., Mr. Ubben is a member of the American Chemical Society and the New York Paint & Varnish Production Club.

R. B. Ubben and Elmer H. Koll

Mr. Koll joined the Milwaukee Paint Division upon graduation in 1928 from the University of Wisconsin with the degree of B.Sc. in Chemical Engineering. As assistant technical director, he will continue to supervise the industrial development and service work which he has handled during the past seven years. A native of Milwaukee, Mr. Koll is a member of the American Chemical Society, the National Society of Professional Engineers, and the Engineers Society of Milwaukee.

Auto Body Engineers Meet in Detroit, Nov. 3-5

The American Society of Body Engineers' Annual Convention, to be held at the Rackham Memorial Building in Detroit on November 3rd to 5th, will be a real highlight of the season for automotive engineers.

Technical sessions include styling, production engineering, small cars, busses and coaches, commercial bodies, body fabrication, and passenger car body engineering. During the convention an industrial exhibit of body materials, parts and body hardware will be open to those interested.

At the styling session, on the first day of the convention, Dr. Claire L. Straith, specialist of plastic surgery, will speak on "Relationship of Present Interior Body Design to Facial Injuries."

E. J. Mahar and R. E. Wright Join Atlas Powder Sales Staff

According to a recent announcement by the Atlas Powder Co., Wilmington 99, Del., Edward J. Mahar and Robert E. Wright have been added to the industrial finishes sales force.

J. M. Howard, General Manager of Industrial Finishes for the company, stated that Mr. Mahar will be the sales representative for the Zapon line in Western Massachusetts, while Mr. Wright will be sales representative in the Philadelphia area.

Mr. Mahar, a New Englander by birth, attended the University of Southern California. During the war he was a Captain in the Air Force and had the honor of being selected to fly one of the first jet planes in the Air Force.

Mr. Wright comes to Atlas with a sales background in finishes, inks, and industrial chemicals. His headquarters will be in the Land Title Bldg. in Philadelphia, Pa.

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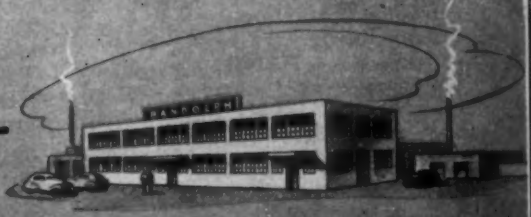

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Does your Oven Foul?

What causes occasional "fouling" of a gas-fired paint baking oven and how to prevent this trouble.

By S. C. RUBENSTEIN
General Manager of
H. I. S. Enameling Co.

IN RECENT years, despite the availability and use of other means of baking enamels, the use of gas-fired convection ovens has reached a new high in efficiency and popularity. This efficiency is attributable to the advent of direct-fired ovens. In the direct-fired oven the combustion gases heat additional air pulled in from the surrounding atmosphere, and this mixture is made to circulate past the material to be baked, giving up, in the process, heat energy to the material. By this means, and with added recirculation, stack temperatures are low and efficiency is high.

The main disadvantage to this type of oven, and perhaps the only one worthy of consideration, is the ease with which the fouling may occur. Fouling is the chemical reaction of the paint coating with undesirable outside elements, to give a dullness, frosting, wrinkling, etc., to the final product. A thorough knowledge of all factors contributing to this oven condition is necessary to avoid grief when least expected.

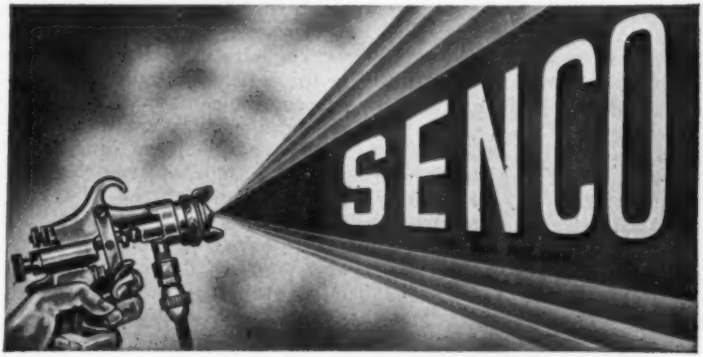
Proper Ventilation, Clean Burners

Proper oven ventilation, of course, is the prime consideration. Most modern type ovens have a self purging feature which will delay ignition for a specific time interval while the fans are working, so that the oven is cleared beforehand of residual vapors, solvents, etc. If this feature is not installed, the process should be done manually. Rapid removal of all vapors is not only extremely desirable, but it is a "must" from the safety viewpoint.

Improper combustion in the burners is often a cause of fouling. The burners should be given reasonable attention to see that they are getting the proper air-gas ratio, and they should be cleaned regularly.

The introduction into the oven of acid or other type fumes from the atmosphere adjoining or surrounding the oven, may cause fouling—which may be extremely difficult to remedy since it may come from a totally unsuspected cause.

Any acid, or perhaps a solvent which by hydrolysis may become an acid, may give off fumes which, if not properly vented, will finally



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reach the oven and, once inside, will react under heat with the enamel present, and ruin the finish. The very sensitive urea-type enamels are the worst offenders. A few drops of hydrochloric acid is sufficient to cause rejection of an entire ovenload.

There have been cases where traces of acid in the atmosphere about the building and surrounding neighborhood were sufficient to cause oven fouling. All acid tanks, degreasers using chlorinated solvents, or any other type solvent containing volatile ingredients, especially paint strippers, should be moved as far away from the ovens as possible and thoroughly vented.

If it is impossible or impractical to remove all undesirable elements, it is a good idea to treat the floor of the oven with a highly alkaline neutralizer. A few drops of ammonia will serve the purpose well and, if needed, should be sprinkled on before every load.

Editor's Note: In reference to the foregoing article, the following comment is added by Mr. R. D. Chatfield, Chief Industrial Engineer of The R. C. Mahon Co.:

"Among the many hundreds of direct gas-fired ovens built by us, we have not, as yet, run across a single case of 'fouling' of a paint oven due to products of combustion. It has been our experience that any fuel gas suitable for use in a kitchen range in the home will not contain any impurity which will be harmful to painted stock in an oven. This statement is based upon the assumption that sufficient air is mixed with the gas before it reaches the burner to insure complete combustion, and that normal fresh air makeup and exhaust capacities are provided.

"The purging interval mentioned in the article is required by all insurance companies. On new installations it must be automatic and is usually of sufficient duration to pass at least three oven volumes of fresh air through the oven before the burners can be lighted.

"We have seen numerous cases of oven 'fouling' due to vapors introduced from outside sources, such as fumes from plating tanks, vapor degreasers, etc. In cases like this, we recommend drawing the fresh air for the oven from some uncontaminated location, if posible, rather than to introduce any chemicals into the oven."

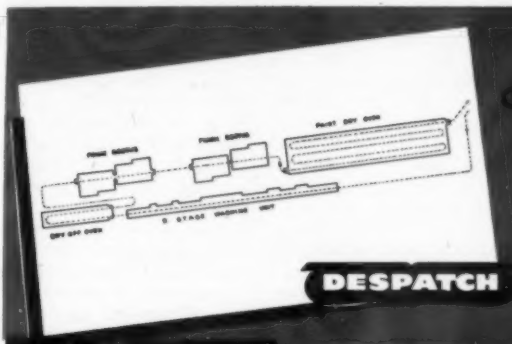
How to be Safe Using Solvents

ACCIDENT records suggest that trouble with solvents arises more frequently where these chemicals are used only occasionally, or in comparatively small quantities, than where large quantities of solvents are regularly employed. The reason seems to be unfamiliarity on the part of the small user with the need for precautions or with the measures which should be taken.

Because even a single instance of careless or improper handling of a solvent during operations such as cleaning, degreasing or thinning may, under certain circumstances, result in a fire or sickness, or both, depending upon the solvent used, the following points should be checked:

1) What does the label say?

Many solvent containers are labeled



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Metal Treating

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Another Engineering Achievement!

Not only did DESPATCH engineer, manufacture and install a large part of Lustron's porcelain enameling equipment, but they also provided the complete system for organic finishing of the cabinets and closets for Lustron homes.

This system included:

1-Paint Baking oven, 22′ x 104′ x 12′.

1-Moisture dry-off oven, 10′ x 42′ x 12′.

1-Five stage metal treating system.

2-Staggered water-wash spray booths (48′ wide).

The fact that DESPATCH played such an important role in the tooling of this mammoth enterprize demonstrates the confidence that the finishing industry has placed in DESPATCH engineering skill.

If your plant has a finishing problem, call your local Despatch engineer listed in Despatch bulletin in Sweet's Mechanical Industries File (1949) and *Write Today* for finishing bulletin 51-E.

Minneapolis Office: 619 S.E. 8th St.
Chicago Office: 221 N. LaSalle St.
Offices in All Principal Cities

DESPATCH
OVEN COMPANY

with recommendations for safe use. If the label has no such information, the manufacturer or packager may be of assistance in providing facts about the safe handling of this product. When smaller cans or bottles are filled in the shop from larger containers, the smaller containers should also be clearly labeled.

2) Are solvent containers always kept closed?

Self-closing safety cans are useful when containers must be opened frequently. Open pails are unsafe for storing or carrying solvents.

3) Is there plenty of ventilation whenever a solvent is used?

Any solvent operation, unless it is in entirely enclosed equipment, may give off dangerous quantities of vapor. Depending on the operation, mechanical ventilation or gas masks may be the best way to protect workers from inhaling the vapor. Where a solvent is used frequently, even in small quantities, mechanical ventilation is often necessary. Industrial hygiene services of local and state health or labor departments are glad to advise on ventilation.

4) Is there a noticeable odor of solvent in the workroom?

The absense of solvent odor does not always indicate that the air is safe. However, a noticeable odor generaliy means that there is too much vapor in the air, even for fairly short operations.

5) Are workers' hands being soaked in solvent?

Whenever solvent may wet the skin frequently or for considerable periods of time, protective gloves of a solvent-resistant material should be worn to prevent dermatitis.

6) Are workers trained to be good "housekeepers"?

Solvents should be handled to avoid spilling, and solvent-soaked waste and rags should be disposed of in airtight containers.

7) Are solvent operations well supervised?

The plant manager or owner must often be his own safety director, to make certain that workers handle the solvent according to instructions, and use gloves, gas masks or other safety equipment provided.

8) Are the men who work with solvents in good health?

Those who work with solvents should report stomach upset, dizziness or other illness to a physician, since these may be symptoms of exposure to solvent vapors. Alcoholics and those suffering from certain organic illnesses should not work with solvents. In many companies, replacement examinations are given to employees before they are assigned to solvent operations.—SAFETY RESEARCH INSTITUTE.

N. C. Moore, New Chief Chemist for Perfection Paint & Color

The Perfection Paint & Color Co., 715 East Maryland St., Indianapolis 2, Ind., announces the appointment of Norman C. Moore as chief varnish chemist to replace Hans C. Aamot, who has returned to his native country, Norway, to accept a position there.

Mr. Moore has had a varied experience in the varnish industry, both as a technical chemist and as a production supervisor, and is well qualified to continue the work of his predecessor.

Perfection Paint & Color Co. has completed a new addition to its plant, which houses the complete grinding department, laboratory and production office.

Forsberg Heads Industrial Corrosion Control, Inc.

Industrial Corrosion Control, Inc., Neville Island, Pittsburgh 25, Penna., whose chief service is lining industrial equipment with anti-corrosive coatings, has been recently incorporated under the direction of R. G. Forsberg, president.

General Sales Offices for Industrial Corrosion Control, Inc. will be maintained at the Empire Bldg., Pittsburgh, Pa. with James D. Clokey, Jr., as Sales Manager.

The plant, located at Neville Island, Pittsburgh, maintains complete facilities to line industrial equipment with Vinyl Plastisol, a thermo setting plastic which has proven highly successful as a protective agent against corrosion.

Painting and Lacquering Buttons by Tumbling

By R. H. MILLS

Superintendent of Universal Button Fastening & Button Co.

gives interesting information on tumbling colors, as well as clear finishes on new buttons.

SUCCESS in tumble finishing really starts with the product's design on the drawing board. It continues with the die and tool maker, through fabrication of the product, and is brought to completion by long experience in the technique of tumbling.

The first requirement of tumble finishing is that the parts or products shall not nest in the tumbling barrel, or later in trays in which the finish is baked. Design of the product plays a big part here. However, in some cases, both design and size are specified; then it is up to the die maker to maintain both size and design and, at the same time, produce an edge or shape which will prevent nesting.

Avoid "Nesting" to Make Tumbling Possible

As a rule, buttons for utility and work clothes are of such shape that they do not readily nest or fit into each other. The edges of button

Each of these tilted open-end tumbling barrels is vented to the overhead exhaust system which carries away vapors from finishing materials used to coat buttons and button covers. Notice fireproof lights above, steam heating pipes below, and cleanliness everywhere.

covers are not flared to the extent that they will nest. They are nearly perpendicular to the flat top of the cover. This prevents nesting. The important thing is, that it is possible to maintain size and design, and still make a product suitable for easy tumble finishing. This is true of most any product.

Painting or lacquering buttons by the tumbling method is apparently a simple operation, yet it is only through experience that real success is attained. To coat the various buttons and button covers, we use gilsonite, oil-base and synthetic enamels, and clear lacquer.

It is not advisable to attempt to set down here any hard and fast rules for either the selection of material, or for the technique of tumble finishing, because the type of finishing material is sometimes governed by our customer's specifications. Also, in tumbling, the temperature and humidity join together to enforce quite a wide latitude in the rules.

Black Enamel is Tumbled and Baked

Generally speaking, the small black button (No. 1 at extreme left in an illustration which accompanies this article) is coated with a gilsonite-base material, because this coating is well adapted to laundering, provides good coverage and, having little pigment, it produces a smooth finish. These buttons are

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You are invited to attend a meeting of minds between your engineering staff and ours. The experience of our technical staff embraces all types of industrial finishes to meet the most exacting requirements.

Every formulation is engineered to individual specifications for the particular service required.

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given two coats. On black enamel we use a viscosity of 38 (Baum test, light hydrometer) for the second coat, but thin it a little for the first coat.

About 130,000 buttons (weight around 45-lbs.) are placed in the tumbling barrel, and one half pint of enamel is slowly poured on the inside surface of the loaded, revolving barrel. This makes for more even distribution of the coating material over all of the buttons.

In Trays, in Racks and Into Bake Oven

After the tumbler rotates about 45-minutes, depending upon the setting-up time of the coating material, the buttons are dumped into shallow metal mesh trays which are then slid into carrier racks suspended from an overhead chain conveyor. Each rack will hold 54 trays. As the racks are filled they are moved into a batch type oven where the finish is baked for two hours at 450° F. The two ovens have a capacity of nearly a million buttons.

After leaving the oven and cooling, the buttons are again placed in the tumbling barrel for a second coat. About one fourth of a pint of enamel is used for this coat, and the tumbling time is cut to about 30-minutes. It is impossible to give exact viscosities and tumbling time. This is where the experience of the tumble finisher determines the success or failure of the operation.

Determination of when to stop tumbling is made entirely by the "feel" of the product. Pieces must tumble long enough for the coating material to cover the entire surface of each button or button cover thoroughly, but if tumbling is allowed to continue too long the finish will lack gloss. The second coat is baked similar to the first coat.

How Color-Filled Letters Are Produced

Referring to the illustration which shows a black button and three button covers, the latter are burnished brass or plated steel with color filled letters. The "Head Light" has blue letters; the other

The tumbling barrels; and, in background, bake ovens and steel racks loaded with trays.

For a handsome, durable, protective FINISH Carrier chooses

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If you make any metal product that requires a quality finish, call on Egyptian first for a specification that assures complete satisfaction.

This CARRIER WEATHERMAKER combines the creative genius of HENRY DREYFUSS, noted industrial designer, with CARRIER engineering and manufacturing skill. The CARRIER name stands for dependability in performance. The WEATHERMAKER is finished with EGYPTIAN RUST INHIBITING SAND GRAY PRIMER, and EGYPTIAN HIGH-BAKE SYNTHETIC ENAMEL.

THE EGYPTIAN LACQUER MANUFACTURING COMPANY

SPECIALIZED PRODUCTION FINISHES

P. O. BOX 444, NEWARK, N. J.

two have red letters. Oil-base material is used for black, as a matter of choice, and synthetic enamel is used for such colors as red, blue and green.

The tumbling operation on button covers is essentially the same as for buttons, except that more coating material is used and tumbling time is not so critical. Color is tumbled on the entire button cover and baked for one hour at 350° F. Then the buttons are placed in a burnishing barrel and tumbled with water, small steel balls and an abrasive compound to remove the finish from the face of the button cover, but not from the sunken letters.

When the surface color has been removed, the button covers are washed and placed in centrifugal driers where fans blow hot air on them as they whirl in the machine. After cooling, a coat of clear lacquer is applied by tumbling. In color finishing, strict observance of both baking time and temperature is necessary to insure uniformity of color in various batches.

Tumbling the Clear Lacquer Top Coating

When we apply clear lacquer by tumbling, the batches are not as large as for color tumbling. About 14,000 pieces, or 15-lbs., are placed in the tumbling barrel to which is added ⅓-pint of clear lacquer mixed in the proportion of one part lacquer to two parts thinner.

These barrels revolve at a speed of 24-rpm. Average tumbling time is five to ten minutes. Here again, button covers are tested by the "feel" to determine the exact degree of tackiness to warrant stopping the barrel. Pieces are placed in shallow metal mesh trays where clear lacquer finishes air dry.

We have found that it is decidedly advantageous to have paint and lacquer manufacturers work with us in formulating a material adapted to tumble finishing. In this way we get a material suited to the particular tumbling job at hand.

While a tumbled finish may not be as lustrous as some of the other finishes, it is by far the more durable finish. It will stand more abuse due to the fact that in tumbling the finish is actually "hammered" into the metal, filling the most minute depressions and eliminating all air pockets which otherwise might have a tendency to reduce adhesion.

New Purchasing Agent for Egyptian Lacquer

The Egyptian Lacquer Mfg. Co., South Kearny, N. J., announces the appointment of Mr. Lawrence R. Gardner to the office of Purchasing Agent. Mr. Gardner

L. R. Gardner, now Purchasing Agent for Egyptian Lacquer Manufacturing Co.

was formerly purchasing agent at the High Point, N. C., plant of another finishing materials concern. Prior to that he was associated with a company in Everett, Mass. Mr. Gardner's offices will be in South Kearny, N. J.

You Can Save THOUSANDS OF DOLLARS

WHICH NOW ARE THROWN AWAY IN YOUR SPRAY BOOTH

SAVES THINNER $

SAVES PAINT $

SAVES LABOR $

SAVES REJECTS $

SAVES TIME $

SAVES MONEY $

by Installing the Revolutionary, New
Bede Paint Heater

One large company is saving $50,000 a year through the use of Bede Paint and Air Heaters. In many other plants, savings of 25% or more are reported—with improved finish and fewer rejects.

With a Bede Paint and Air Heater, one coat often is as satisfactory as two—because heated paint has reduced viscosity, requires less thinner, and gives smoother, more even distribution of paint particles. Overspray is reduced, drying is faster, and higher gloss is obtained.

The Bede unit is safe, simple to set up, easy to operate. Installed between the pressure tank and spray gun, it takes up little space and operates under simple thermostatic control. Another unit, which heats paint only, is available if desired.

Write for illustrated booklet and full details.

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Making Machinery Foolproof

INSTRUCTIONS about how to operate and take care of a new machine or mechanical device are soon forgotten. Maintenance pamphlets are easily lost, as the Army and Navy discovered during the war. Even rigid discipline was not enough to insure proper operation and maintenance of machinery used by the armed forces.

Durable metal instruction plates that resist rust, corrosion, and the elements seem to be the best solution for reducing the mistreating of machinery. With clear and complete information as to its use, made an integral part of the machinery, the excuse "I didn't know" is nullified.

Manufacturers have learned a valuable lesson from the experiences of the armed services, according to Mr. E. Blake of the American Name Plate Co. In highly competitive competitive fields, preference for one product over another is often decided upon by the ability of the manufacturer and his sales force to assure the buyer that workmen will always know how to operate and care for the equipment properly. Metal instruction plates and panels are an invaluable aid in informing users what can and what cannot be done with a piece of machinery—or in allocating responsibility for mistreatment.

Some suggestions to manufacturers, as volunteered by Mr. Blake are:

1) Attach instruction plates where they can be easily seen by everyone who operates the machine. No one will go out of his way to look for instructions. Put them where they are easy to keep clean and legible—and make it a rule to keep them that way.

2) Use great care in writing instructions. Keep the text simple and non-technical.

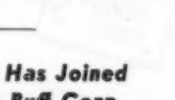
3) Grease fittings, inspection points, etc., should be marked with identification plates giving clear concise instructions as to procedure, type of grease to use, etc.

4) Select the instruction plate according to the type of equipment on which it will be used. For instance, salt water corrodes all but a few metals; chemical fumes, oil, water, etc., will corrode some metals but have little effect on others.

5) Do not place instruction plates near exhausts, etc. They will not be kept clean in such difficult places.

L. S. Sternal Has Joined The Jackson Buff Corp.

L. S. Sternal has joined the Jackson Buff Corp., Long Island City, N. Y., as sales manager. His duties include building a national sales force to adequately service the demand for the company's products.



L. S. Sternal, now Sales Manager for Jackson Buff Corp.

Mr. Sternal graduated from Carleton College, Minn. He later joined a large concern that has plants in Schenectady and Bridgeport. Prior to the war, he was sales engineer for the New York branch of a Minnesota firm.

After serving three years in the Navy as an officer on the staff of a Destroyer Squadron Commander, he rejoined Minnesota Mining as Methods Engineer. Mr. Sternal gained wide experience developing new usages and applications for the polishing industry.

Lighten the Sprayer's Work

and **increase** his **efficiency**

By George Conrad

MOST CONCERNS today are trying to reach production goals greater than ever before. In many cases the painting or finishing department is the bottleneck; this may be due to antiquated equipment, poor management or personnel, or a number of other reasons. Perhaps the real reason is because the paint shop was left behind while the rest of the plant was modernized. At any rate, regardless of the reason, the fact remains that something must be done to increase production.

Five Possible Ways to Increase Output

There are five methods, any one or more of which may be utilized to achieve this end. They are: 1) Work overtime; 2) add an extra shift; 3) hire more men; 4) modernize the shop, utilizing labor-saving equipment and speedier methods; 5) increase the production obtainable from the men and equipment now on hand.

The first four methods are not always practical in every factory—and sometimes any one or all of them is impossible due to local conditions.

Overtime work demands pay at the rate of time and one-half or double time. Furthermore, the production per man hour, after eight hours of steady work, takes an alarming drop.

An extra shift requires breaking in new crews, bonus payments, and additional supervisors who

Make arrangements to have the work placed at a convenient height for easy spraying. The easier and safer any spray job is, the quicker it can be completed.

may not be available. New men must be trained and often the spray room has not enough facilities for them to use.

While modernization of building, equipment and layout is always desirable, it is sometimes out of the question because of circumstances that prevail at the time. Limitations of space or power, uncertainty about the future, or lack of funds are the usual reasons given for postponing the often promised dream shop.

Find Out What Makes Sprayers So Tired

The fifth method has the distinction of being always practicable. It costs little and, given intelligent application, it will always produce results. Its results will become evident in both added output and fewer rejects. It is quite possible to get more and better work out of the poorest workmen by the simple expedient of making their work as easy as possible. Industry has long recognized the seriousness of worker fatigue—and no where is fatigue more evident than in the average spray room.

There is hardly a spray operator who, while doing his daily stint, does not strain his back working too low or too high; he strains his eyes trying to see his work; strains his hands trying to trigger a gun that becomes slippery; strains his temper tripping over tangled or coiled hose on the floor . . to mention only a few man-killers.

I have seldom seen a spray booth where it would not have been possible to take 5-lbs. or 10-lbs. of weight or torsional resistance from every man's burden, and to shorten his movements per day by miles. A little intelligent observation will disclose hundreds of minor annoyances which relentlessly waste the sprayer's strength — physical and mental—and which affect both the quantity and quality of his work as the day progresses.

Have Spray Booths Well Lighted

Few spray booths are properly lighted. Furthermore, sufficient light for a booth in which only bright colors are sprayed, falls far short when dark colors are used. Proper illumination requires what you might call primary and secondary lights. The best primary lighting consists of fluorescent tubes set in vapor-proof wells in the ceiling of the booth. These illuminated tubes cast a diffused light over the work and do not blind the sprayer when he looks up.

If fluorescent lights are not practical or possible, then try a series of small spotlights, set above the operator's normal working position; have them so positioned that they are focused on the work and shaded from his eyes. Several small lights are better than one or two large ones, as they tend to minimize the shadows cast by the spray operator's arms and head while he is working.

The secondary lighting consists of portable or adjustable spotlights. The purpose of these is two-fold; first, they can be used to light up dark corners of the article being sprayed, where the regular lights do not reach. Second, they can be adjusted to reflect across flat surfaces. This enables the sprayer to easily determine the coverage, thick-

HILO
THE BEST IN PRODUCT FINISHES FOR THE BEST IN PRODUCTS
For best results on
frequently washed surfaces
HILO'S new
Alkali-Resistant
WHITE ENAMEL
This new enamel holds up well when washed with soap solutions, detergents, and the newer soapless cleaners so popular in home use today.
Especially recommended for home washing machines and other big production items—also for the many smaller enamelled surfaces subject to frequent washings, such as kitchen utensils, sink strainers, soap trays, refuse containers, bathroom fixtures, metal hampers, towel rods, etc.
Hilo new Alkali-Resistant White is a one-coat enamel, a synthetic. For maximum alkali resistance, bake at 300° for 30 minutes.
WRITE FOR A FREE SAMPLE
Just say you'll try it and later tell us what you think of it. No other obligation whatever.
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ness, or wetness of his coating, without tedious sighting across the surfaces. It is especially important when spraying wrinkle finishes. With proper lighting, such time consuming and neck straining inspection can be considerably reduced, if not eliminated entirely.

The best lights that money can buy will soon become practically useless in a spray booth if they are not kept clean. This cleaning job should be a regular chore. If paint becomes baked on the globes or porcelain reflectors, soaking in a warm caustic soda solution (10-oz. to a gallon of water) will quickly remove it. Painted reflectors can be resprayed.

When a spray-booth has been cleaned, I suggest applying a spray-booth coater on the walls and ceilings before using the booth again. Since these coaters are white or light in color they brighten the interior of the booth, make it easier to clean, and provide a pleasanter place in which to work.

Kind of Turntable a Sprayer Needs

The turntable for any spray booth is a comparatively simple piece of equipment, yet few people realize how important it is. A turntable should be of heavy construction. It should set firmly on the floor or in the booth, and should be capable of being leveled. It should be either adjustable for height, or it should be quite low, with an assortment of fixtures to raise various kinds of work to a comfortable spraying level. The most efficient working level, involving the least visual and physical discomfort, is around waist high.

The top of the turntable should turn freely without tilting or wobbling. It should be heavy enough to prevent the work from floating away from the air blast of a spray gun. Incidentally, although most turntables have round tops, I firmly believe that a square or rectangular top would fulfill the purpose far better. The square top lends itself more readily to the proper balancing of loads; fixtures and bars are more easily squared and clamped: and it is much easier to mask and keep clean.

Handling Work Easily in Spray Booth

Beyond a doubt, high production is best achieved through the design of jigs or the loading of trays so that the greatest number of parts can be sprayed at one handling. However, if this grouping of parts

A turntable that has a square or rectangular top is easier to mask, easier to turn by hand, and the work can be more easily balanced on it, and can be taken off easily.

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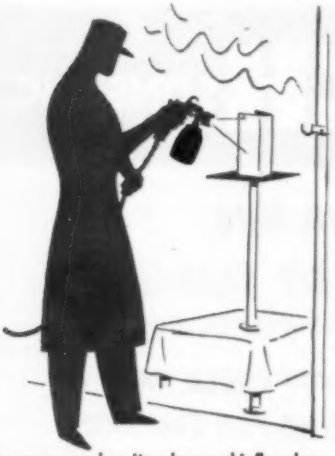

The cup gun has its place—chiefly where a small quantity of material is to be sprayed. Don't use it on long production runs that call for spraying one kind of material, and refilling the cup repeatedly.

results in too much weight for easy lifting or, if too much time is lost in loading, it will be more economical to furnish the spray operator with a helper. Not only can a good helper at least triple the sprayer's solo output; but, by sharing the lifting, the sprayer's energy will last longer. Rejects, resulting from mis-handling, are also reduced.

A thought generally forgotten about production in connection with spray guns is this: To get the most out of a spray gun and operator, the arrangement should be such that the operator never hangs up his gun to move parts. Production, stops when the gun leaves the operator's hand. Production does not start again until the operator picks up the gun to spray. This may be a little far fetched, but the principle is there.

If a man must work alone, moving his work in and out of the spray booth, it is desirable to keep the load to a size and weight which he can easily carry. One way of keeping the weight down is to keep all trays and fixtures stripped of paint accumulations. I have seen trays that weighed three times their original weight because of heavy accumulations of overspray. If oven trucks are used, blocks or brakes for the wheels are a good investment. Nothing is more exasperating than a truck "going for a walk" when you are trying to slide a loaded rack onto it. Truck casters should always be greased for easy pushing.

Select and Use Proper Spray Gun

Poor selection of spray guns and hose, both air and fluid, is the reason for 75% of the finisher's fatigue. Since the fatigue is concentrated in one arm, it is more painful. The trifling amount of common sense and expense required to minimize this condition will produce dividends in the form of more and better output.

It should hardly be necessary to mention that the cup gun has no place in production spraying. Still, it is surprising how many experienced workmen will fall into the habit of spraying quart after quart of identical material from a cup—even attempting real intricate work with it. Whenever more than a quart of material is called for, or when accurate spraying is involved, the pressure tank (as a container for material) is a must. The unwieldy, heavy cup has no easy balance when attached to a spray gun

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and it limits the arc of operation to less than 180° in any direction; it makes close work impossible. Besides the time lost in repeated refilling, the cup gun requires too much spraying to cover a given area, and it is limited to light material.

With a pressure system, the operator's speed is limited only by his skill, the pressure in the tank of material, and the size of the fluid tip with which the spray gun is fitted. The spray gun can be used at any angle, and high viscosity material is no problem at all.

Despite the superiority of the pressure system over cup guns, there still remains room for a bit of ingenuity to be exercised, and some daily maintenance, in order to achieve our aim of making the sprayer's work as easy as possible. The spray gun itself should be oiled every day. A mixture of light oil and a small amount of powdered graphite is particularly good, being applied to all points of movement or friction.

Technique of Doing Effective Spraying

The fluid needle packing nut of a spray gun should never be so tight as to require extra tension on the fluid needle spring. The spray operator should be taught to use the proper size fluid tip on his spray gun and then work with the fluid control wide open.

Some sprayers dislike wearing cotton gloves because the fabric of new gloves slides so freely on the polished surface of the spray gun. This slipping and sliding soon becomes very tiring and makes hand control difficult. The same condition is encountered with bare, sweaty hands in warm weather. Both can be remedied, to some extent, with a little masking or friction tape wrapped around the trigger and grip.

Selection of Hose for Air and Fliud

Proper selection and fitting of air and fluid hose can be a factor in facilitating the sprayer's work. To my mind the wearing quality of hose is not nearly as important as its flexibility and lightness.

When selecting hose, follow the recommendations of the leading manufacturers of spray guns. They have had long experience with hose of various types and sizes—and they have studied the hose problem from all angles. They are out in front with what is the latest and the best.

The length of material hose from tank to gun should not be longer

When you use long lines of material and air hose to reach the work, you lose air pressure, have longer lengths of hose to clean, and the hose becomes tangled and is walked on.

A fair exterior is a silent recommendation.

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Mounting the pressure container on an easy-running dolly makes it convenient to move when necessary—and this kind of setup does away with the need of a long hose.

than is necessary to reach the average work. When the hose is too short, the torsional resistance is increased; when it is too long, the coils of excess hose are usually underfoot or in the way much of the time. Additional range can be secured by mounting the material tank on wheels and extending the supply line from air transformer to pressure tank.

Snap-on Fittings; Position of Hose

On all air lines, I really favor the quick-change or snap-on fittings, particularly the ones that swivel. This makes the system standard; and there is no lost time using wrenches, adapters, or valves. Hose can be lengthened or shortened by merely changing sections. Caution should be used in the purchase of quick-change connections. Be sure to get them from one of the leading spray gun manufacturers. Although I have not yet seen them, I understand that a similar type of coupling is available for fluid lines.

The fluid hose should be pulled back toward the air hose where it is connected to the spray gun grip, but the two should not be wrapped tightly together. One way to accomplish this—although it is a makeshift—is to place an ordinary hose clamp on each hose. One should fit tightly, but the other one may be left loose. Link the two together with a short loop or wire through the screws. This arrangement will hold the fluid line away from the work, yet it allows both hose to twist independently.

Reaching high or low to spray soon becomes tiresome, if it must be done repeatedly hour after hour, all day long. Work that is low should be raised to a convenient working level. To reach high places, steps or a platform should be provided.

A more modern and professional way to get the material hose and air hose close together, near the end of the gun handle, is to use a bent fluid tube fitting which can be obtained from a spray gun manufacturer. This fluid tube extends down from the fluid connection (back of the nozzle), clears the trigger and bends back to a point

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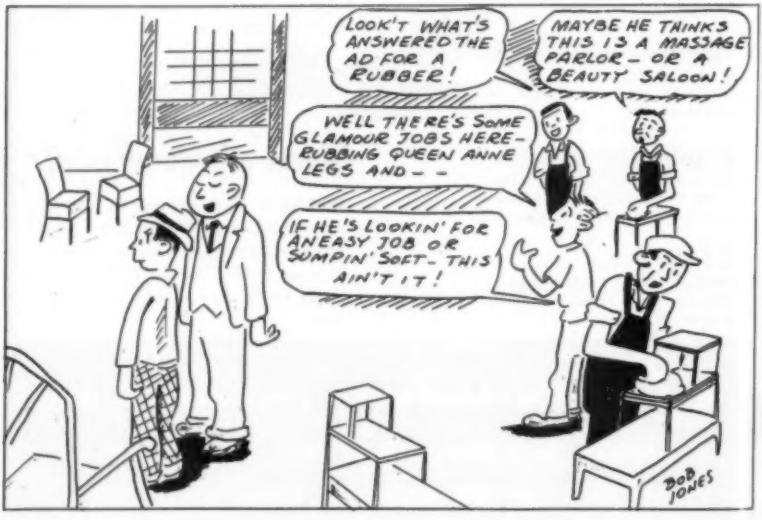
near the end of the gun handle, to which it is anchored by a metal fitting. Three or four feet from the gun, the two hose should be taped together—all the way from this point to the tank.

If a material strainer is required, it should be on the material tank. The type of strainer that fits on the spray gun is more of a nuisance and obstruction than a cup of material attached to the gun.

Remove Causes of Fatigue; Irritation

In this short article I have mentioned a few of the more important factors that affect a spray operator's production. There are countless minor irritations which the supervisor can detect and correct. Noisy exhaust fans and compressors; hard cold floors; extremes of temperature—these to name a few—are not conducive to clean, fast work. Make the work as easy and pleasant and safe as possible, and the men will produce in spite of themselves.

There is a certain type of work encountered in every spray room that requires a great amount of dexterity with the spray gun, often combined with accurate, rapid triggering. This work quickly tires the man who is accustomed to the slower pace and intermittent nature of average work. For this reason, it is wise to always give this more difficult work to the same man or men. If given enough of it, the muscles in their hands and forearms will soon become used to it. Result: They will be going strong long after the untrained man is ready to give up.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Random Comment on the Industrial Scene

(Continued from page 8)

tional Chemical Exposition and National Industrial Chemical Conference at the Coliseum in Chicago.

The Show will reveal that virtually every manufacturing process in some way involves chemistry. All those holding technical or management positions will find it interestnig to attend the Exposition.

* * *

Furniture Designs. A noticeable trend exhibited at all of the Summer furniture shows was toward smaller and more useful furniture. Plain surfaces and light finishes, designed to reduce the housewife's work, predominated. All of this is an answer to smaller homes and small apartments. High building costs have forced down room sizes, and in some cases eliminated certain rooms.

This trend has led to a revival in interest in hide-away beds; drop leaf, extension and gate-leg tables; and combinations of tables and dressing tables, chests, etc. Most interest was displayed in the double duty features incorporated in traditional designs rather than in the ultra modern extremes.

* * *

A New Film. A vinyl film said to have extraordinary waterproofness and sun-fast qualities is now available in both transluscent and opaque colors. This synthetic material is produced from special resins.

* * *

Conservation. Bernard De Voto, writing in Harpers, calls attention to powerful groups which seek to expand grazing of cattle in the last forest preserves of the West. These public lands, with the future timber supply of the nation, have been seriously damaged by erosion caused by overgrazing. Public interest should be aroused and efforts made through the various trade associations of the timber using industry to preserve these forest ranges and to protect them under a really adequate Forest Service.

* * *

Aluminum Lacquer, which closely approaches certain types of metallic plating, has been developed. It is said to have extreme corrosion resistance and may be applied to any clean ferrous surface, whether previously treated with a phosphate coating or not. It may be applied either by spray, dip, flow coat or roller coating.

* * *

New Lamp. A new fluorescent lamp has been developed, which it is said, doesn't give the human complexion that palor which is ordinarily associated with fluorescent lighting. The new lamp produces a soft white color which reveals a normal healthy color in the complexion. Under the new light, colored objects and fabrics appear in their natural colors.

* * *

Air Express. A gain of 11½% in the number of air express shipments handled during the first six months of this year is reported by the Air Express Division of Railway Express Agency.

Technical Specialties Co. Moves to Wilmington, Dela.

The office and laboratory of Technical Specialties Co., formerly of Malden, Mass., have been moved to Wilmington, Dela. Mr. T. L. Hines is now President and General Manager of Technical Specialties Co. Dr. William E. Decker remains as Technical Director. The development and manufacture of pearl essence and "Dekadhese", a technical adhesive, will be carried on.

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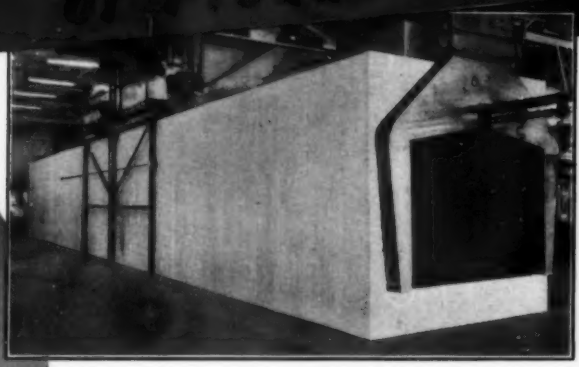

Photo shows indirect steam blast coil air-circulated body oven producing rapid drying. Note high-pressure air seals at both ends of oven.

The accompanying pictures are part of the Complete Finishing System for bodies, fenders, hoods, frames, wheels and miscellaneous parts located at the newly opened Lincoln-Mercury Division plant at St. Louis, Mo.

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Clarity in WOOD FINISHES

Methods and technique which help to make a clear finish that will reveal and enhance the natural color and grain of attractive hardwood surfaces.

By Rollin H. Wampler

A PRIME CONSIDERATION in fine wood finishing is that the natural or stained wood colors must be clear and rich. Experienced finishers prefer to avoid a high sharp brilliance ("flash"), or a muddy appearance which partially hides the beauty of grain and color in fine cabinet woods. This is especially true when working with deep colors.

In most cases it is possible to bring out the colors as brilliantly as may be desired. But often it is difficult to get a rich subdued tone that is free from muddiness or cloudiness. The characteristic of the finish that is desired may be called "clarity". Transparency (but not brilliance) is perhaps a more positive definition of the term.

No machine or instrument that I know of will give a true measure of clarity. This feature can be evaluated only by visual inspection with a practiced and experienced eye. You who have noticed lack of clarity in working with wood finishes will recognize it at a glance, but who can really describe it? It is this elusive characteristic in wood finishes that will occupy our attention in this article.

How can clarity be achieved? No one can answer this question in a

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few words. The best we can do is to mention a few things that tend to produce a lack of clarity.

First of all, it should be recognized that in flat varnishes and lacquers the composition of the finishing material has something to do with clarity. Some materials give better clarity than others. Careful comparative tests, to determine the clearest flat varnishes or lacquers, will not always guarantee that in practice the finishing system will be perfectly clear.

Use Non-Bleeding Stain for Wood

To begin at the wood, the stains used should be based on dyestuffs selected for maximum clarity. Pigment-base stains, while they serve well for some types of work and are better than dye-base stains for certain purposes, detract from clarity where the grain pattern of the wood is to be emphasized to its fullest extent.

All pigments, by their very nature, have some degree of hiding power. On the other hand, dyes are fully transparent and therefore contribute to the clarity of the finish. This means that on expensive cabinet woods the stains generally used should be either water stains or non-grain-raising stains. Although penetrating oil stains and spirit stains are also based on dyes, some of them are of questionable value for the finest work because of such inherent characteristics as bleeding and lack of permanence (fading in the presence of strong light).

For the utmost clarity in a finish for fine cabinet wood it is desirable that dye-stuffs used in the stains should not bleed too much into the sealer and topcoats. This migration of color away from the wood into the lacquer or varnish can be the cause of a muddy appearance in the final finish. Some dyes used in water stains and non-grain-raising stains will bleed more than others.

Careful tests made on different brands of stains will quickly indicate those that have the least tendency to bleed. Such tests are made by spraying a thin coat of white lacquer enamel over several wood panels coated with different stains. The degree of discoloration of the enamel is a measure of the stain bleeding.

In addition to the selection of stains, it should be mentioned that dye-base stains have more tendency to bleed into topcoats if the stained surfaces are not thoroughly dry when coated. The heavy solvents or dye carriers used in non-grain-raising stains must have time to evaporate or penetrate well into the wood before any filling or sealing operations begin.

Wash Coat Is an Aid to Clarity

Perhaps the chief cause of muddiness in many wood finishes is the omission of a wash coat before filling. Some individuals whose word carries weight in the finishing room believe that wash-coating before filling can be eliminated. Well, it can be left out, but at the expense of clarity. The wash coat (sealer or shellac of 5% to 10% solids) helps hold out the filler and therefore helps to prevent excessive darkening of the wood by solvents and oils in the filler. [*To page 96*]

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The use of a wash coat seems like a foolish and useless operation to some executives because it disappears into the wood and seems to contribute little if anything to the final finish. To prove the point yourself, wash coat one half of a panel and leave the other half bare. Then fill, seal and apply varnish or lacquer. The difference in the final finish is apparent at once.

To lean too heavily on the filler for color is another cause of muddiness in the finish. It is better to use as much stain as is needed to produce the color, and then rely on the filler to just fill the pores of the wood. The filler should contain only enough color pigment to keep the color dark enough in the pores. Fillers that are loaded heavily with strong color pigments detract from the clarity of a fine finish.

An important point to keep in mind is that the filler must be wiped clean if the finish is to be clear. See that the filler crew does its work thoroughly, and that it is supplied with as much clean wiping materials as may be necessary. Incidentally, the wash coat serves a valuable function in that it makes possible the wiping off of all excess filler quickly and easily, leaving the surface clean.

Practices That I Wouldn't Recommend

Some finishers like to add color, in the form of stains, to lacquer sealers and even to final coats. While the practice may have some justification in helping provide a more uniform color, unless it is done with great care the clarity of the finish is likely to suffer. If greater color depth is desired, I suggest using a deeper stain on the wood. The color belongs in the wood, not in the topcoats.

Some fine work is glazed with a pigment wiping glaze to produce a deep rich color. When properly done the glazing does just that. In inexperienced hands, however, too much glaze is often left on the surface, with the result that the clarity of the finish suffers. The glaze should be wiped off as clean as possible, specially when a dark color glaze is being used.

The same principle holds true with regard to lacquer shading stains. Use them sparingly. To overtone the entire piece with this type of stain may produce a muddy appearance. When a deeper overall color is needed, some finishers prefer to apply a second coat of non-grain-raising stain over the filler. While others object to this practice on principle, it cannot be denied that it gives a clearer deep color than if color is added by using a shading stain or glaze.

Rubbing Job May Affect Clarity of Finish

One of the most important things that determines the clarity of the finish is the rubbing procedure. If only a fair rubbing job is done, and if the surface is not cleaned up perfectly, the inevitable result will be cloudiness and muddiness. While the surface may seem to be bright and clear immediately after rubbing, the residual oils penetrate the film and cause cloudiness. In extreme cases it may even cause slight precipitation of nitrocellulose in lacquers, giving rise to a condition resembling a very slight moisture blush. [*To page 98*]

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It is important that the finish be thoroughly dry before rubbing begins. That is rule No. 1. No. 2 is that after rubbing has been done the surface should be wiped so clean that it will not finger mark when stroked lightly with the fingertips. If a clean-up polish is used, it should be wiped off perfectly clean and dry. A final coat of wax is good insurance against the type of hazing which so often detracts from the clarity of the finish.

Put Color in the Wood—Not Over It

Of all the causes of muddy finishes, as enumerated in this article, perhaps the ones you find most often are: 1) poor filler wiping; 2) too liberal use of glazes and shading stains, and 3) slipshod rubbing. Remember this: The color should be in the wood, not over it. Follow this principle, and many pitfalls will be avoided.

What has been said in this article about pigment wiping stains, some types of fillers, glazes, shading stains, and toners must not be construed as condemning these materials. They have important uses in wood finishing. I have only tried to point out the materials and methods that may interfere with the clarity of the finish on fine furniture, fixtures, paneling and cabinet work.

Paint, Varnish and Lacquer Convention Nov. 8-10

The 60th Annual Convention of the National Paint, Varnish & Lacquer Association will be held in Chicago, Ill., at the Congress Hotel, on November 8th to 10th inclusive. The Association's permanent address is 1500 Rhode Island Ave., N. W., Washington 5, D. C.

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Margaret Studios, Antigo, Wisconsin, says of PYRO-CELLO-FILM: "We have found nothing which, for ease of application, high finish, durability and downright satisfactory day in and day out uniformly good results, can compare with it." PYRO-CELLO-FILM enhances all woods . . . and is impervious to mars, scratches, grease, alcohol and acids. Many leading makers of wood products use and endorse PYRO-CELLO-FILM. Just try it, and you'll know why!

PYRO-CELLO-FILM is an exclusive development of the American Varnish Company.

What do YOU require of an organic finish for your wood products? Let us finish one of them with PYRO-CELLO-FILM—at no cost to you! We think you'll agree it's the finest preparation of its kind. Write for complete information today!

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Chicago 22, Illinois

Manufacturers of varnishes — paints — stains — lacquers — synthetic enamels—cello film—soldering flux and special coatings.

Silk Screen Printing

I noticed in July 1948 issue of INDUSTRIAL FINISHING, pages 56-66, an article by John W. Nee of Napko Paint & Varnish Works, dealing with paint for pennant printing by the silk-screen process. If the paint product is manufactured by the Napko Paint & Varnish Works, would you kindly let me know their address?—Fabritecture Institute.

The author of the article answers part of your question. The firm's mailing address is P. O. Box 9145, Houston, Texas. —ED.

Metal Cleaning

Can light gage metal stampings be cleaned of a light oil film by immersing them in plain boiling water? Are there chemicals that would improve such action? Would appreciate any reprints available on a one-dip procers or on the simpler types of degreasing setups.—T.E.Co.

You will need to use a cleaning compound in the hot water. For exact details consult one or more of the manufacturers of metal cleaning compounds that advertise in this magazine.—ED.

"Plastic Metal" for Repairs

The inquiry entitled, "Non-Shrink Putty for Metal Castings", on page 86 of June issue, would indicate that some of your readers may be interested in learning about our "Plastic Metal," a fast drying thermoplastic compound which contains no oil. It has good adhesion to any kind of metal, from rough castings to polished surfaces. It can be feather edged, is easy to sand and, regardless of the thickness of the fill, it will not show any shrinkage.

Many people are using "Plastic Metal" to fill cracks and holes in castings and sheet metal fabrication, because they can sand it promptly, apply lacquers or enamels, and then bake at 350° F. without any danger of blisters or cracks.

This material can be used on any type of surface, and can be exposed to extreme weather conditions without the necessity of painting. This last desirable feature explains why so much of it is being used to glaze aluminum sash. "Plastic Metal" will not sag under heat; it will resist acid, caustic, oil, grease, gasoline, water, etc.—Plastic Coating Co.

Flock Finishes

I am interested principally in flock finishes at the present time. If there are any articles available I would appreciate copies of same.—H.E.

We have published several articles on this subject—and plan to publish more of them. For further information, write the concerns who advertise flock finishes in INDUSTRIAL FINISHING.—ED.

Flock and Flock Adhesives

We are introducing a number of new items calling for flock. Would appreciate your sending us the addresses of several firms who could furnish us with adhesives adapted to the various varieties and lengths of flock.—D. & D. Co.

Names and addresses supplied by letter.—ED.

Touch-up Procedure for White Enamel

We are always interested in reading what appears in the "Letters from Readers", and we make it a point to pay particular attention to any unusual finishing problems that are outlined.

In the July 1948 issue of INDUSTRIAL FINISHING, this department contained an inquiry regarding "Material Touch-up for Baked White Enamel." This is a problem on which the Glidden Research and Technical Service Departments have done a great deal of research and development for their many appliance customers. We believe we now have a satisfactory system developed.

In the past we have had materials available for our customers of both types mentioned in your reply to this inquiry, but neither of these proved to be quite satisfactory. The Glidden Touch-Up Procedure, used in actual production and in the field, has proved to have the merits of perfect color match with the baked enamel; color retentive properties very close to those of the baked enamel; and container stability. Glidden Touch-Up Procedures—materials and complete instructions—have been made available to

NEW PERIOD
Production Finishes
BAKING ENAMELS
LACQUERS SHELLAC
ENAMELS FILLERS
SEALERS SUPPLIES
PRIMERS STAINS
SYNTHETICS VARNISHES
Your Best Salesman, at the Point of Sale, Is An Attractive, Durable Finish
New Period chemists constantly work to build better finishes . . . faster schedules . . . at less cost.
SEALERS—Provides excellent body, dries fast and sands easily.
LACQUERS—CLEAR & SEMI-GLOSS. Uniform and dependable—Suitable for coating almost any surface—Provides more coverage and unusual mileage. Cuts costs.
LACQUER ENAMELS—FLAT & GLOSS. Available in a wide variety of matched colors and shades. Widely used by leading manufacturers.
SYNTHETIC ENAMELS—A durable and trouble-free finish for fast production. Built to meet the most exacting production schedules.
FILLERS and STAINS—New Period has long been famous for its Fillers and Stains. Specially formulated for mass production use. Unequalled color-matching service.
Remember New Period Finishes for Quality and Service
MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES
NEW PERIOD Production Finishes
ESTABLISHED 1917
NEW YORK WOODFINISHERS' Supply Co.
109 ITALY STREET

our customers through the services of the departments mentioned in The Glidden Co. ad on page 33 of this same July issue, and the article which appears on page 88.

We will always welcome an opportunity to help your readers who have problems in lacquer, paint or varnish finishing, if you will refer them directly to us.—C. O. Hutchinson, Technical Service Director.

To Finish Plastic Toys

We are interested in the ornamental finishing of plastic toys. There must be some regulations regarding the toxicity of the coloring materials used for this purpose, but we are unable to put our hands on them. Or is it sufficient to specify the end use in ordering from the paint manufacturer? We shall greatly appreciate your advice.—T. Chemical Co.

We do not know what if any regulations exist in reference to the use of nonpoisonous paints on toys, other than that it is undesirable to use them. Toy manufacturers strive to obtain and use nonpoisonous paints on toys for small children, and several concerns can supply such paints. In a letter we are naming a few of them.—ED.

Buffing Banjos

About nine or ten months ago we saw an article in INDUSTRIAL FINISHING Magazine, telling how Banjos and other musical instruments could be buffed without burning, by using a buff with seperators. If possible, please send to us at once a copy of this article.—R. Mfg. Co.

We are sending you tear sheets of the article entitled, "Finishing Musical Instruments", as published in August 1947 issue of INDUSTRIAL FINISHING.—ED.

Howard's Plastic Patch

In the July 1948 issue of INDUSTRIAL FINISHING, under "Random Comment", on page 108, reference is made to a metallic patching material known as "Howard's Plastic Patch". We have been unable to locate the source of this material. Can you help us?—Metco.

The writer of "Random Comment" identifies the concern as Howard Paint Division of Reconditioning Products, 5201 Denison Ave., Cleveland, Ohio.—ED.

Flow-Coating Process

On reading the March issue of INDUSTRIAL FINISHING Magazine, I was particularly interested in the article on page 67, entitled, "Flow Coating of Farm Machinery". I would appreciate the opportunity of securing more information regarding this process of painting, as I want to know whether it would be adaptable in our plant. We have just installed a new paint shop and this process of painting appears to be quite interesting, from what I've read of it.

Could you make arrangement for me to contact the author of the article, or view a setup of this type in the near future? I would appreciate any assistance you can render . . .—A. E. Corp.

In a letter we are giving you the address of the author of the article. Morrill & Renahaw of Chicago 22, Ill., has installed some flow-coating systems.—ED.

Portable Stirrer Wanted

We are writing to ask whether you know of any concerns that manufacture a portable motor-driven stirrer or agitator. We want to stir finishing material in the can and dipping tanks. The device would have to be light so that it could be easily manipulated over dipping tanks, etc.—H. M. O.

There are several. In a letter we are naming a few of them.—ED.

Silk Screen Printing

Our engineering department is interested in the series of articles on silk-screen printing by Bert Zahn, which appeared in June, July and August 1945 issues of this magazine. Please let us know if reprints are available, or what these back numbers would cost.—Specialties, Inc.

We happen to have a set of tear sheets of the series of articles on Silk Screen Stenciling, by Bert Zahn, and are sending them to you by letter. More complete information on this subject can be obtained by studying Bert Zahn's book entitled, "Silk Screen Methods of Reproduction", copies of which we can supply at the price of $3.00 each.—ED.

Cleaning and Treating the Surfaces of Metal

EDITOR'S NOTE: One of our friends has written us a letter in reference to different methods of cleaning and treating metal surfaces in preparation for painting. Quoting part of the company's letter:

"We believe that this would be of interest to your readers in numerous cases where economy is a factor and a minimum of space is available.

"The unique qualities of this product are that it will clean and provide an efficient phosphate coating in a single-stage washing operation. It has been our experience that the cleaning obtained is the equivalent of a good alkali wash-

MAR-PROOF LACQUER

SCHAEFER'S Mar-Proof Lacquer is a performance-proven finish that cannot be easily marred or scratched.

It's tough—tougher than the ordinary lacquers; meets the most critical requirements of current production.

Made in either clear gloss rubbing or satin finish, it produces a splendid transparent coating of full depth on maple, walnut, gum, mahogany and other cabinet woods.

Economical; gives plenty of coverage and dries quickly. Our Mar-Proof Lacquer Sealer is recommended with it for a first-coater.

Working samples furnished without obligation. Write for them!

THE SCHAEFER VARNISH COMPANY, INC.
Louisville, Kentucky

SCRATCH-PROOF

MAR-PROOF

STANDS LOTS OF ABUSE

ing operation, and that the phosphate coating provided, at the same time, is approximately 40-mg. per sq. ft. The economy of this product is obvious, in that it accomplishes, in one operation, what has required at least three or four operations.

"The method is to use [this product] at a 2% by volume concentration in a power spray washer, at a temperature of 140° to 160° F. No rinse is required and it may be used in ordinary steel washing equipment in most cases.

"We hope that this is of interest to you, and we shall be glad to furnish more details on the application of this product on request."—K. C. Inc.

Spray Booth Coatings

We would like to obtain a copy of John Cawein's article on Spray Booth Coatings that appeared in July 1947 issue of this magazine, pages 64 to 72.—I. P. Corp.

The article is titled, "Compounds for Wet and Dry Spray Booths". The part dealing with "Compounds for Coating Dry Spray Booths" begins with the second column on page 71. A copy of the magazine is being sent to you. For further information on this subject, write the concerns who advertise spray booth coatings in INDUSTRIAL FINISHING.—ED.

Peel-off Coating

In looking through the ads in INDUSTRIAL FINISHING Magazine I saw one about the Apaque quick-drying peel-off coating for temporarily masking name plates and parts before painting. We are interested in knowing the address of the company making this material.—G. M. Co.

You are probably referring to an editorial illustration which appeared on page 52 of May 1948 issue—a "picture which shows a workman spraying an opaque, quick-drying, peel-off coating or masking material over the faces of name plates and radiator ornaments . . . " Several firms make or can supply a material suitable for this work. In a letter we are naming a few of them.—ED.

Graining on Masonite

My brother asked me to write you and ask if you knew of someone who has a graining roller or small machine that would do graining on masonite, for chifforobes.—B.B.

In a letter we are giving you the names and addresses of several concerns who can supply graining equipment. Look over the advertising pages of several copies of INDUSTRIAL FINISHING. Frequently both new and used graining equipment is advertised.—ED.

Berg Cleaning Tool

In the June issue of INDUSTRIAL FINISHING on page 84, "To Chip Off Old Paint," you discussed means of chipping off old paint. We have used the Berg Cleaning Tool, marketed by The Concrete Surfacing Machinery Co. of Cincinnati, Ohio, and I believe this is the equipment to which you refer.

I am not sure that the device is available today but merely pass on this information to assist in clarifying your reference cards regarding this machine. I believe that industry is very appreciative of your efforts to have available such information.—Albert MacLeod, Coatings Technical Service, The Dow Chemical Co.

Thank you, Mr. MacLeod. I believe this is the tool we had in mind.—ED.

Sandpaper Information

We have read an article in INDUSTRIAL FINISHING for November, 1946, about "Sandpaper That Gives More Work Value," by E. B. Gallaher, M. E. The author points out that, "This is a slightly edited reprint of a copyrighted bulletin published by Clover Mfg. Co. (Abrasive Paper and Cloths), Norwalk, Conn. Title of the bulletin is "The Effect of Moisture on the Work of Glue-Bonded Abrasives."

We should like to know if we may consult Mr. Gallaher about work value tests. It is of particular interest to us to know the grinding and measuring methods employed when ascertaining the results arrived at, as shown in Fig. 1, in the above mentioned article. (This chart shows how the performance of the same sandpaper varies according to the moisture of the atmosphere in which it is stored and used.) —H. B. A., Hoganas, Sweden.

You are welcome to write Mr. Gallaher direct. In a letter we are naming additional firms which may be in position to supply you with further information.—ED.

Luminous Paints

Please let me know where I can buy luminous paints for resale to the retail trade, as noted in your August issue on page 4.—E. B.

Try the New Jersey Zinc Co., 160 Front St., New York 7, N. Y.—ED.

Silk Screen Stenciling

Just a few lines to say I enjoy INDUSTRIAL FINISHING magazine very much, as it has such helpful articles in it. Was wondering if I could get a few tear sheets from the issue of April, 1946, on the article, "Advertising Posters by Screen Process," or any other on the silk screen process? I have given all of these to others who are interested in this work.

Enclosed is my renewal for INDUSTRIAL FINISHING, the most informative magazine of its kind.—David Lunstrum.

Our last set of tear sheets of this article is being sent to you.—ED.

11 REASONS WHY
NATIONAL CASEIN'S *is the preferred Wood Repair*

SAVE time...SAVE labor...protect work in process against failure to pass inspection... avoid customer complaints on finished product. Use National Casein's Wood Repair to fill cavities or cracks. Simple to apply, quick to set, easy to finish, guaranteed to last as long as the wood when applied according to directions.

CONVINCE yourself. Send 25¢ for a generous ½ pound sample of any of 12 available wood colors, or white.

NATIONAL CASEIN SALES Eastern Division 601-19 West 80th Street Chicago 20, Illinois

NATIONAL CASEIN CO. Broad & Fulton Sts., Riverton, New Jersey

Clean Reflectors in Infra-Red Tunnel

We have an infra-red oven which is rather a large unit with gold plated reflectors. At times, in the past, the air displacement factor was not sufficient to draw fumes out fast enough, and a film is built up on the reflectors. The coating is really fused onto the reflectors. Several cleaning solutions and methods have been tried, but still we have trouble.

Do you have any recommendations which we could try, and evaluate here, so that the efficiency of our line can be improved?—L.A.

So far as my experience with gold-plated reflectors is concerned, your trouble is and always has been a factor or characteristic in that type of infra-red unit. If the manufacturer of the oven can not suggest some method of cleaning the reflectors, it is pretty safe to assume that no one else has stumbled onto a method for removing the deposits which build up in such an oven, even when the draft requirements are fully met.

Except for some experimental installations of the reflector-type of unit, I have had little experience with them, as compared to the type where the reflector is built into the bulb. Our experience showed that reflectors would fog up with dust and coating particles, and that the loss in heat-reflecting value was one which decreased steadily from the time of installation. With the built-in type of unit, we frequently were able to clean the units in a bath of solvent two or three times during the service life of the unit, and thus to attain close to maximum heating output of the unit until near the end of its life.

My only recommendation is that you change the type of heating element you are using, as I feel sure that the oven installation you are using (a well known make) provides the maximum of draft reguation, distribution and control to meet your special product needs.—E. STERRETT.

Our Finishes Peel; Why?

We have been experiencing some trouble recently with our finishes peeling, and would appreciate any information you can supply with regard to ideal drying conditions for lacquer.—C.C.Co. (Makers of Good Furniture).

Your inquiry is lacking in many details and this makes it impossible to give specific and accurate recommendations.

A true lacquer dries solely by evaporation of the solvents, so that more than force drying is unnecessary. Good results have been obtained by force drying each coat of lacquer for seven to ten minutes at 170° F., and the final lacquered product, 30 minutes at 170° F.

Today many lacquers contain alkyd or other synthetic resins and the baking time is dependent on the character and amount of resin added.

The peeling condition may be due to improperly cleaned metal having

What's Your BLACK LACQUER *Problem?*

ADHESION
JETTINESS
FLOW
COVERING
GLOSS; SETTLING
UNIFORMITY
DRYING TIME
SHEEN
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KIRCO

KIRCO BLACK LACQUER is a trouble free, proven production finish for metal, wood or plastics. A working sample to meet your requirements will be sent on request.

All Exterior and Interior Surfaces of the Freedom Train are finished with KIRCO Lacquers, Synthetics and Adhesives.

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a thin film of oil on its surface. Vapor degreasing or alkali cleaning methods will effectively improve this condition.

Also, it may be well to try spraying a thin mist coat of lacquer as the first coat. When dry, apply a normal (not too heavy) coat of lacquer.

If a primer or surfacer is being used, the possibility that not all of the solvent has been driven from the film, prior to the application of lacquer, should be checked.—LOUIS E. MARTIN, Chief Chemist.

From the meager information you give it is impossible to tell just what your problem is, with regard to peeling. Of course, it is not difficult to describe ideal drying conditions for lacquer. From your letter I would assume you believe that peeling trouble is due to improper drying conditions. First of all, assuming that you manufacture only wood furniture, I find it somewhat difficult to visualize your having peeling problems.

In general, all furniture lacquer or varnish, whether it be of high quality or poor quality, has satisfactory adhesion to wood. Sometimes it happens that lacquer sanding sealers which contain excessive amounts of sanding agents, such as zinc stearate, do not form a good bond with the top coat, but this failure is usually noticed in scratching white rather than peeling.

In finishing metal it often happens that lacquer has poor adhesion if applied when the humidity is high. Generally a temperature of 70° to 100° F. is perfectly satisfactory for drying lacquer, but the humidity should be less than 50%.—RAYMOND C. ADAMS, Technical Director.

If you will reread your letter as a complete stranger, you will note that it is necessary to read your letter heading to know you are making furniture. Whether it is softwood, hardwood, wicker or steel, I don't know. I must start mentally going through every possibility of each operation in order to determine the cause of your lacquer peeling (from all possible surfaces).

You are sliding over the normal everyday things which to you are clear; but you are not breaking down each operation and examining the small simple things which are at the root of your trouble.

If the humidity is high, the rapid evaporation of solvents will lower the temperature at the thin wet film of lacquer. This lowering of temperature draws moisture from the air causing blushing (milky white finish). This moisture does not help adhesion and if an excessive amount of moisture is drawn to the lacquer film, it could cause peeling of the finish.

The possible remedies would be to slow the drying time of your lacquer by adding a retarder to the thinner. I prefer dibutyl phthalate which is a plasticizer and promotes a greater elasticity to the dried film, as well as slowing down the drying time. With the aid of dibutyl phthalate, I have kept production going at full speed with the humidity at 94%.

If what you are coating is a soft wood such as fir, it is possible that your fillers do not have enough vehicle to give sufficient binding, so that when the lacquer is sprayed, the solids in the fillers will "draw" or "blot" the solvents. In other words, the wicking action (like a candle wick) of the fillers drawing the fast evaporating solvents down will cause a lowering of temperature at or in the fillers which will draw moisture from the soft wood, and the only adhesion the lacquer has is to the moist filler.

To overcome this, when the filler is reduced to spraying viscosity with

No. 5099 SANDING SEALER

The outstanding qualities of this Sealer, verified by the long period of time through which it has held its position in the wood finishing field, are—

—fast drying
—easy to spray
—takes liberal reduction
—sands cleanly with a light touch
—good build-up
—ideal over stain and filler
—supports every type of lacquer, varnish or enamel
—toughness
—durability

This is a standard all-purpose item in the wood finishing industry.

Or—we will make for you any type of Lacquer, Sealer, Stain or Filler, which your particular process may require.

STILLE-YOUNG

Manufacturers - LACQUERS - FILLERS
STAINS-ENAMELS-PAINTS-*Chicago 14*

Tailor-Made—Our long list of standard items may contain **exactly** what you require. But if not, we'll formulate it for **your special process.**

thinner, add a small amount of lacquer to replace the vehicle washed out by the thinner. The lacquer will sufficiently seal the fillers to prevent the wicking action and improve adhesion, because the finish lacquer will have a base to bind itself to—a base which is "in sympathy" with the finish lacquer. If each coat applied is not in sympathy with the previous coat, peeling can be expected.

By being in sympathy I mean that each coat should have the same type of vehicle. If a synthetic lacquer is used for the fillers or prime coats, you are not sure whether the material is drying by evaporation or oxidation. If it dries by oxidation, the finish lacquer which dries by evaporation will not adhere as competely as if two materials of the same nature are used.

Be sure to use only the thinner recommended by your lacquer supplier. Each thinner is a blending of solvents designed also to be in sympathy with its particular lacquer. A cheaper thinner, or an all around thinner may force some part of your lacquer out of solution, resulting in poor adhesion.

In my estimation it is advisable to use external atomization which will permit complete control over the atomized particles and deposit whatever kind of coat you want, from a wet coat to a dust coat, depending on your requirements.

Another cause of the finish peeling from a wood surface would be wiping the work with naphtha or other petroleum solvent before lacquering. The petroleum solvent is not in sympathy with lacquer. On steel the base metal is not thoroughly clean and the oils are drawn from the pores of the steel by the thinner, and form a thin oil or fat base under the lacquer film.

Aluminum must be alkali-etched before spraying to remove corrosion oils and to produce enough etched surface for the lacquer to cling to. Zinc or zamak must be acid-etched for the same reason.

If your lacquer drum has been left open, so the contents partially evaporate, and if it was necessary to add thinner to reduce it to its original viscosity—this may cause peeling. The reason for this deals with the plasticizer, and the explanation might lead to a disagreement with the paint manufacturer. So just leave it at that, and consider it a possibility of peeling and keep your containers covered at all times.

Also check your oil and water filter to be sure that you are not passing an excessive amount of moisture into the compressed air that goes to your spray guns. Wash the filter in naphtha to remove the oil; then wash in alcohol to remove the moisture, and then blow it out with compressed air to remove dirt particles.

It is wise to consider an air supply system that will regulate the temperature of your spraying and drying department, as well as the humidity. If your production will permit this expense, it would create ideal conditions for the drying of lacquer.—W. BEACHAM, Crystal Laboratories, Inc.

ACCIDENTS are usually the consequence of somebody not knowing something he should have known. The worker who is unfamiliar with a safe work practice; the foreman who does not know how to instruct; the maintenance man who does not realize that his failure to take care of something promptly may cause some worker injury or death; the plant engineer who does not know the critical limitations of the process he installs; the management which does not know how to organize—each one contributes to produce accidents.

£ STERLING

Complete Finishing Systems

Primers...Thinners
Clear and Synthetic Enamels
Ready-mixed Metallic Lacquers

3508 Market St. **STERLING LACQUER MFG. CO.** St. Louis 3, Mo.

DRUM TUMBLING MACHINE

for Efficient Mixing of Materials in Suppliers' Drums

- No solvent loss
- No time loss
- Material ready when needed
- No fire hazard
- Nothing to clean

- Supplied in sizes from 5 to 10 gallons; any load, any speed.

Send For Literature!

THE VOL-U-METER CO., P. O. Box 546, Buffalo 16, N.Y.

Why Does Paint Blister on Our Truck Bodies?

I am foreman for a large manufacturing concern and we are having a very serious problem. We make truck bodies from Paint-Grip spangled metal made by the American Rolling Mill. We first wash the metal with Humble No. 6 cleaner's naphtha. Next we use Lithoform, waiting two minutes and washing twice with hydrant water. Then we prime with Preparakote and wet sand after 12 hours; wash with water and then cleaner's naphtha, tacking off with a tack rag.

Then we apply the finish coat of a well known make of enamel which is extensively used for trucks, busses and street cars. After from two to 12 hours, blisters (the size of a pinhead to ¼-in.) form on various panels. Could you give me any solution to this problem?—C. P.

Well, let's review your preparatory metal treatment, prior to the application of primer-surfacer coatings. You first wash the metal with cleaner's naphtha and follow this with a passivating (acid treatment) solution, which is doubly rinsed with water, after which the surface is dried before priming.

Now if the body metal was of galvanized, galvannealed, or other zinc or electro-coated metal, this treatment would probably be successful. However, you are doing a lot of unnecessary work which, at the same time, is causing these unsatisfactory results.

"Paint-Grip" metal, manufactured by the American Rolling Mills, is a special galvannealed product, Bonderized and made ready for paint coatings at the mill. Any further treatment by the finisher—which might disturb this initial Bonderizing treatment—is not only unnecessary but dangerous.

Actually, all that you really need in your preparatory treatment, is the naphtha wash to remove any wax grease, or other foreign substance that might accumulate during fabrication. After this wash, it is perfectly safe to proceed with the prime coating.

Blisters are due to rust, moisture, or some volatile material, sealed under paint coatings. Expansion under heat, weather changes, etc., cause blisters or raising of the paint film. In this particular case, I am inclined to believe that most of the trouble is caused by moisture (from the water rinses) remaining in the pores of the metal, even after priming. The porous condition of the metal is probably accentuated by the unnecessary acid treatment you are using. The range in time of the blister appearance is probably due to variations in the high temperature of your locality (Texas). —DALE MUSSELMAN.

"Detergent" Changed to "Chemical" in Cowles Firm

At a special meeting held in Cleveland, Ohio, on August 16th, the stockholders of the Cowles Detergent Co. approved a resolution changing the firm's name to Cowles Chemical Co.

The firm announced that a change in the name seemed advisable because the business of the concern is becoming increasingly diversified and is no longer restricted to detergents, which are a specific class of chemicals. Since the firm is largely engaged in manufacturing and selling a varied line of chemicals, it seemed proper to change the name to Cowles Chemical Co. No change in ownership, management or policy is involved in the change of name.

Conger Becomes General Mgr. of Paint & Enameling Division

The American Industrial Chemical Co., Inc., 901 W. North St., Indianapolis 2, Ind., announces the appointment of Wayne H. Conger as general manager of its Paint & Enameling Division. This division is specializing in quality applications of protective coatings to products of all types of manufacture.

Mr. Conger has had extensive experience as foreman of finishing and manager of finishing in Indianapolis factories.

School for Finishers

Free to Journeymen and Apprentices

Now entering its second season, the Finishine School for Finishers offers a free training that even surpasses the course which was taken with such enthusiasm by so many finishers last year.

The course includes high-quality commercial finishing as well as the art of finishing, repairing and restoring rare and costly woods, porcelains, marble and other objects of art. Classes held at College of Forestry, Syracuse University.

Registrations are limited. Reservations should be made on business stationery and will be accepted in the order in which they are received.

Here's Another Way To Improve Your Skill

Deluxe "ELECTRO-KNIFE"

Easier, Faster, Safer

Does a Better Burning-in Job

Patent No. 2,427,209

The controlled heat of the Deluxe "Electro-Knife" gives you a better burning-in job—minimizes danger of scorching finish or overheating Stix. Eliminates nuisance of heating and reheating spatula. No open flame—no fire risk. Beautifully made for performance and long life. Order today—only $15.95 each—$14.95 in lots of 3. SPECIAL OFFER: Knife, 12 assorted Lacstix, Abrazo and pad—$22.10 value—only $18.10.

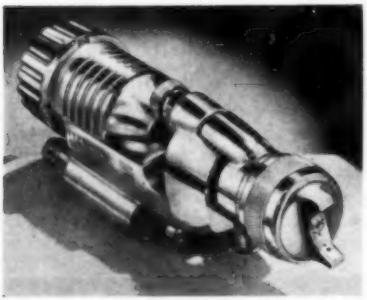
627 Tallman St. Syracuse 4, N. Y.

New Automatic Spray Gun Announced by DeVilbiss

The DeVilbiss Co., 300 Phillips Ave., Toledo 1, Ohio, declares that its new AGA gun has been developed to serve as a fast-acting automatic spray gun that has great capacity and simple controls. It is adaptable to any type of spray finishing machine. The gun is only 7-in. long, weighs 2¾-lbs. and can be supplied with mounting adapters that permit tipping and turning it to any position.

The lightning fast action allows the gun to open, spray, and close 5400 times an hour. It is controlled entirely by an air-operated piston. This improved construction provides positive leak-proof shut-off of fluid and air at the end of each spraying cycle. The simple and efficient design of the AGA gun, with its comparatively few parts, makes for easy maintenance, easy cleaning, and assures long dependable service.

All types of materials can be sprayed with an AGA gun. The same wide range of air caps and fluid tips used with the DeVilbiss MBC hand spray gun are interchangeable on the AGA gun. For additional information on this new automatic spray gun, write DeVilbiss for Folder IE-C104.



For fast automatic spray painting.

S-W Announces Reinstatement of Kem-Lustral Enamel Line

Due to an improved raw material supply the complete line of Kem Lustral Industrial Enamels has been reinstated, it is announced by the Sherwin-Williams Co., Cleveland, O.

This line of durable synthetic enamels is available in 24 colors, including black, gloss white and semi-gloss white. The product is equally well suited to wood or metal, and to exterior or interior use. It dries to a mirror-like finish.

Because of recent advancements in synthetic resin research, the new improved formula provides greater hiding, better flow and higher gloss.

Kem Lustral is furnished in brushing consistency and is adaptable also for spray and dip application. For dipping, a 20% reduction with VMP naphtha is necessary and for spraying a 25% reduction is recommended with VMP naphtha.

The coating air dries to touch in one hour, is tack free in four to five hours, and the film reaches wrapping hardness in eight hours. The baking schedule for whites and light colors is 45 minutes to one hour at 200° to 225° F., and for dark colors, 30 to 45 minutes at 225° to 275° F.

If you want COOL - FRESH AIR - - - plus protection for Head, Eyes and Ears against spray particles

Sharpe

AIRLINE PAINT HOOD NO. 100

Is Your Answer!—Light and transparent. Unaffected by Paints, Enamels and Lacquers—Very tough in hard service. Inner head frame is adjustable, and made of sturdy fibre —Efficient Air Filter keeps a constant flow of FRESH, COOL Air circulating INSIDE the hood.

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MANUFACTURING COMPANY
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Cash Must Accompany Orders

INDUSTRIAL FINISHING
1142 NORTH MERIDIAN STREET INDIANAPOLIS 4, INDIANA

Duranite H—Hard, Tough, Durable, Resistant

A new organic finish for metal, with porcelain-like qualities, has been fully tested in the field and is being marketed by the Atlas Powder Co. under the trade name of Duranite H. According to E. H. Bucy, General Manager for the company's plants in Stamford, Conn. and North Chicago, Ill., the new finish made from an entirely new resin—besides being more economical than porcelain, is tough, permanent, and is better than porcelain in impact-resistance, adhesion, and flexibility.

Duranite H has been scientifically developed to eliminate troubles commonly found in porcelain. The new finish is not brittle and does not require special equipment for application. It gives brilliant luster and has remarkable resistance to humidity, soaps, salt spray, acids, oils and alcohol. Over a primer on plain or Bonderized steel, Duranite H is used as a 2-coat finish capable of withstanding hard usage. On treated aluminum — acid or alkali etched — it gives an exceptionally fine one-coat finish when baked for 30 minutes at 425° F. Duranite H provides an excellent one-coat finish on surface-treated magnesium. On metals that cannot tolerate high fusing heat, its relatively low baking schedules, as compared with porcelain, have proven to be important.

New Wood Lacquers

The introduction of three new industrial finishing materials for the woodworking trade is announced by Allied Finishing Specialties Co., 2641 W. Grand Ave., Chicago 12, Ill. These materials are sold only in 55-gallon drums, although samples and small quantities for test runs are available.

One of these new materials is a clear semi-gloss wood lacquer, designated as C-7046-L. The product is high in solids, easy rubbing, non-settling and gives a satin-rubbed effect.

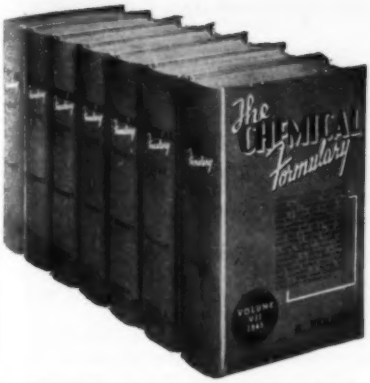
The second is a clear gloss wood lacquer known as C-2047-L. This finish has excellent marproofness, high solids and blush resistance. It is of medium viscosity and can be reduced as much as 20% for spraying.

The third material is a sanding wood sealer called V-7032-L. Merits of this sealer are excellent fill, unusual standout, resistance to cold checking, high-solids content and easy quick sanding.

New Airline Hood for Paint Sprayers

The Sharpe Mfg. Co., 1224 Wall St., Los Angeles 15, Calif., has put on the market a new and improved airline hood for the paint sprayer. This hood allows cool, fresh air to

Gives the spray painter clean fresh air.



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Lubricants	Removing Stains	Pharmaceuticals	Textiles	Cleaners
Drugs	Bleaches	Oils & Fats	Fibres	Waterproofing
Farm & Garden	Ceramics	Liquors	Beverages	Metals
Specialties	Deodorants	Dyeing & Coloring	Flavors	Alloys
Resins	Disinfectants	Fluxes	Rustproofing	Glues
Cements & Concrete	Laundry	Explosives	Metal Treatments	Pastes
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INDUSTRIAL FINISHING Magazine

1142 North Meridian Street **Indianapolis 4, Ind.**

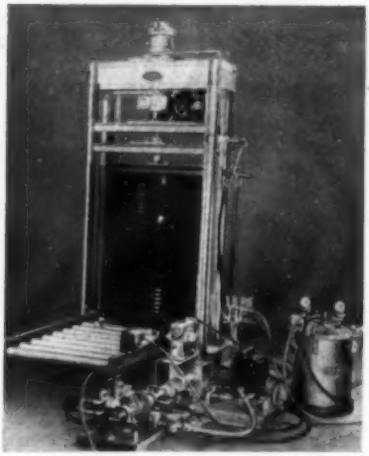
reach the operator, while at the same time protecting his eyes, head and ears against spray particles or fumes.

This hood is made from a special plastic and is light in weight, transparent and is unaffected by paints, enamels or lacquers. It will withstand hard service.

The inner head frame is adjustable. It is made of sturdy fiber and is fitted with an efficient air filter which keeps a constant flow of fresh air circulating inside the hood and passing out through eye openings in the hood to prevent particles and fumes from entering.

Automatically Spray Paints Chimes of Steel Drums

Eclipse Air Brush Co., 310 Park Ave., Newark 7, N. J., announces an automatic spray painter for steel barrel chimes. This new contribution to steel barrel maintenance is an advancement over the former manual and semi-automatic chime painting methods. With it, painting can be stepped up to more than 400 barrels an hour.



Sprays chimes at both ends of steel drum.

The unit includes two Eclipse GAT guns, mounted in position for painting the chimes or for striping. The entire procedure is automatic; the positioning of the barrels, the spraying and the discharge of the finished job. It can be used for painting new barrels or for refinishing the chimes on used barrels.

The Eclipse spray equipment works on the low-pressure principle which means that the lowest possible air pressure and volume are used to give results consistent with the viscosity of paint and the speed of operation.

New Traffic Paint

A new traffic paint based on two Hercules Powder Co. (Wilmington, Dela.) chemicals, Pentalyn 802A, a synthetic resin, and Parlon, chlorinated rubber, has proved to be excellent in both durability and rapid drying.

Test cross lines laid down on a highway intersection in South Camden, N. J., considered to be the second busiest highway intersection in the state, show little signs of wear after more than two months of service.

The prime requisites of traffic paints are rapid speed of drying, and durability. This is particularly true of intersection cross lines where the paint is subjected to more traffic wear.

100% Plastic Finish

According to an announcement by Phenoplast Corp., 331 Madison Ave., New York 17, the product "Phenoplast" is a 100% phenolic resin (a very hard plastic) that sets at room temperature. In other words, it is

Mac's

FASHION BLEACHING LACQUER

Is "water white" in color . . . can be applied by brush or spray. Highly recommended for extra light or blonde finishes. Can be coated over with MAC'S Filler or Glazing Stain.

Produces a lighter finish when applied directly over bleach, sanded and dusted wood. Prevents the oil in filler or stain from causing a darkened color.

Write for samples and descriptive folder.

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD **PHILADELPHIA 36, PA.**

★ ★ ★ 3 STAR SPECIALS

FOR THE WOODWORKING INDUSTRY

★ C-7046-L CLEAR SEMI-GLOSS WOOD LACQUER

Satin finish rubbed effect
Color—light; easy rubbing
Cold check resistance—excellent
High solids—25% plus
Non-settling; viscosity—medium
Blush resistance—good

★ C-2047-L CLEAR GLOSS WOOD LACQUER

Gloss—high; rubbing—easy
Cold check resistance—excellent
Blush resistance—good
Solids 25%; good standout
Color—light
Viscosity—medium

★ V-7032-L SANDING WOOD SEALER

High solids—25%
Color—light; fill—excellent
Cold check resistant
Easy, quick sanding
Standout unusual; non-settling
Viscosity—medium

These Items Sold Only in 55 Gallon Drums

PRICED TO CUT COSTS AND WIN FRIENDS

Testing sample free—5 gallon trial order at drum price

ALLIED FINISHING SPECIALTIES CO.

2641 WEST GRAND AVENUE **CHICAGO 12, ILL.**

an air dry finish that has many of the characteristics of a baked finish. Can be used for coating wood, metal, cardboard, composition material, etc. It can be applied by brushing, spraying or dipping.

Characteristics of the film produced by a coating of Phenoplast are that it is: extremely hard, of high gloss, transparent, non-porous, odorless and very resistant to heat, hot water, gasoline, alcohol and chemicals.

Color Buffing Compositions

The Hanson-Van Winkle-Munning Co., Matawan, N. J., has perfected a new bar composition for color buffing carbon steel, stainless steel and chromium plate. This composition is designated as 6-B-72.

In order to produce a good color on the above metals, free from cloud or cast, it is necessary that the compound produce a light and soft face on the buff with sufficient lubrication to prevent scratching. Compositions producing this type of buff face have limited cutting ability.

6-B-72 Composition has a binder that retains the abrasive on the buff face for a long period of time, permitting it to do its cutting; and it does not build up a heavy waxy face that prevents a high color, free from casts.

Handy Color Selector

A color selector display board, which allows the prospective paint and enamel purchaser to select and match colors at a glance, has been developed through the use of transparent plastic — Du Pont "Lucite" acrylic resin.

The color selector consists of a large frame of clear "Lucite" on which 16 or more small panels are mounted in grooves. Each small panel is painted with a different color paint or enamel on the reverse side. Since the painted surface is on the inside of the panel and mounted against the board, the paint samples are protected from abrasion, flyspecks and dirt, and so retain their original color and brilliance.

Under each panel a strip of black "Lucite" is attached carrying the color or shade and stock number of the sample directly above. Space is allowed at the top for the name and trademark of the paint manufacturer.

The selector board is manufactured by Plastic Arts, Inc., Providence, R.I.

New Reel to Suspend Portable Tools

A self-winding reel that suspends portable tools for use on the production line, and raises them out of the way when they are not needed, is a recent addition to the "Zoo" brand of products made by AeroMotive Mfg. Co., 1803 Alcott St., Kalamazoo, 24, Mich. *(Continued on page 124)*

It's tension is adjustable.

SUNBRITE

SUNBRITE

Complete Finishing Systems

BRONZE PASTE • BRONZE POWDERS

ALUMINUM PAINTS • GOLD POWDERS

CHROME-TYPE ALUMINUM PAINT

SUNBRITE MFG. COMPANY

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NON-INFLAMMABLE

« *wax free* REMOVER »

for paint, varnish, lacquer, baked enamel, adhesives

EASY TO APPLY—NO AFTER CLEANING

I. C. D. FORMULA 9 is the standard of safety and quality . . can be sprayed or brushed . . doesn't raise grain nor discolor . . quickly removes all kinds of finishes and coatings from any surface or material . . costs less to use . . saves time, labor and material.

BRUSH CLEANER I. C. D.—Non-inflammable brush cleaner works fast . . does not injure nor loosen the bristles. Easy to use . . leaves the bristles clean as a whistle. Order a gallon can and convince yourself.

ORDER TRIAL GALLON AT DRUM PRICE

INDUSTRIAL CHEMICAL DEVELOPMENT CORP.

247 MADISON AVE. NEW YORK 17, N. Y.

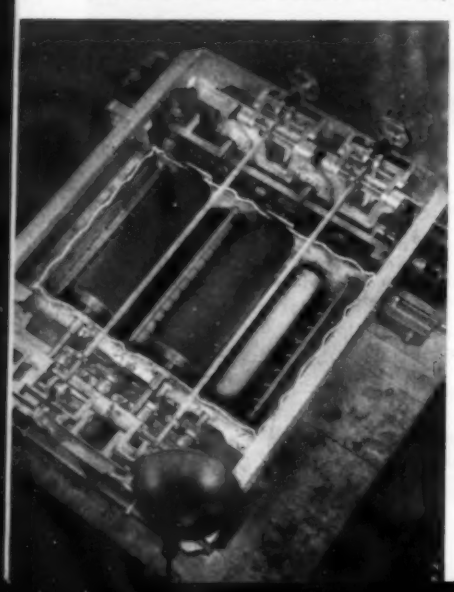
The Zoo "SelfWind" Balance Reel is hung from a beam or a cable in work position above the operator. The power tool is fastened to the end of a 6-ft. cable wound on a drum within the housing. Reel tension is easily regulated to balance any tool weighing up to 10-lbs. The operator simply pulls the tool down for use when he needs it, raises it out of the way when he has finished the job.

Brushing Equipment for Strip Metal

The Rockwell Brush Box, developed and built by W. S. Rockwell Co., 200 Eliot St., Fairfield, Conn., is a machine for continuous cleaning of steel or non-ferrous strip, after it has passed through a pickling or cleaning solution.

The brush box is of all stainless steel construction made to withstand the corrosive effect of the pickling or cleaning solution, and rusting

Flat narrow strips or wide sheets of metal can be wire or fiber brushed, wet or dry.



The strip, either in a single broad width or a series of narrow strips, up to 60-in. total width, enters the brush box and passes over a set of spring tension wringer rollers which press out most of the acid and water before it passes through the brushes. Another set of wringer rollers at the exit side of the box removes the spray water before the strip leaves the box.

From the wringer rollers the strip passes between the anvil rolls (on which the strip actually rides), and the revolving Tampico fiber or stainless steel brushes. The anvil rollers are driven in the same direction and at the same speed as the strip, by either the conveyor power supply or by independent motors, if so desired. The four cleaning brushes are driven, independently by A. C. motors, in the opposite direction to that of the strip, and at a much higher speed, varied to conform with the characteristics of the metal strip.

The brushes are oscillated approximately 3-in. by means of cams, giving a 2-way motion to the scale removal and, even more important, prevents the strip from wearing a "track" in each brush. The tension between the brush and the strip can be regulated.

While being brushed, the strip is constantly sprayed with water, and the loose scale is carried by the water to the drain underneath the box. The seal arrangement plus the wringer rollers prevent water from leaving the box at any place except at the drain opening. If need be, the set-up can be arranged for dry brushing.

Farrellok, Rust Remover

The Farrelloy Co., 1245 N. 26th St., Philadelphia, 21, Penna., announces a product called "Farrellok" for removal of rust, protection of metal surfaces from corrosion, and preparation of surfaces for paint.

NOW PERFECTED...

a New Kind of LACQUER and an Amazing New VARNISH

Cut your wood finishing 25%—or more!

Here are two revolutionary products that will slash your wood finishing production costs.

One is LEVELAC, a new kind of lacquer. The other is LEVELVAR, an amazing new varnish. Both flow on so smoothly that sanding and rubbing time are reduced to an almost unbelievable minimum.

You also benefit by a decided improvement in appearance and slick feel—for both products level out and dry to a glass-smooth finish. Both are available in gloss, semi-gloss and flat.

LEVELAC and LEVELVAR, exclusive American-Marietta developments, have been adopted by our regular customers with every demonstration. New production facilities make it possible for us to serve your requirements.

Send the coupon for more facts. Better still, phone or wire for our technical representative to come and prove our claims right in your own plant. No obligation, of course.

American-Marietta Company, Industrial Division, 43 E. Ohio St., Chicago 11, Illinois.

AMERICAN-MARIETTA
Fine Industrial Finishes

GET THE PROOF—MAIL COUPON!

Industrial Div., American-Marietta Co.
43 E. Ohio St., Chicago 11, Ill.

Show me why I should change from my present conventional type lacquer or varnish finish to *Levelac* or *Levelvar*.

Name .....

Firm .....

Address .....

City ..... *State* .....

Mildew Preventative

A material which, when added to and mixed in with an exterior paint, will act as an effective means of preventing the formation of mildew, is called Mer-Q-Ree. It is a product of Mer-Q-Ree, Inc., 4723 Elm St., Bethesda 14, Md. The product contains 20% mercury compounds and is, of course, poison. One to two pints, added to five gallons of paint, will make surfaces painted proof against formation of mildew.

Primer for Metal Surfaces

A metal primer that has unusual adhesive powers and is extremely economical to apply, is announced by Thompson & Co., Oakmont, Penna.

This new product, Vinsynite Primer, can be applied on damp or slightly oily surfaces without degreasing, and still it clings like a leech to the metal. It is especially useful where pre-treatment with etching solutions or solvent washes is slighted or omitted entirely.

Vinsynite contains no toxic pigments; it is an air-dry coating that can be applied by spray or brush. In addition to its remarkable adhesion, it is an excellent inhibitor. It increases the life of all types of finishes exposed to salt water immersion or salty atmosphere. It inhibits corrosion and at the same time serves as a perfect foundation for paint, varnish, lacquer and enamel coatings.

New Pressure Washer Utilizes "Cold Stream" Principle

An improved pressure washer, the Hydro-Air, with a broad range of applications to industrial cleaning jobs, is announced by D & M Products, Inc., 4655 Kingswell Ave., Los Angeles 27, Calif.

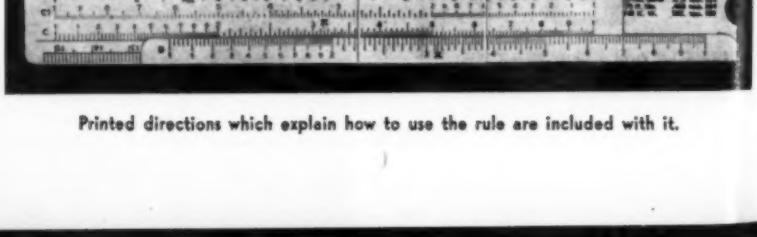
Using a precisely controlled mixture of water and compressed air, the Hydro-Air produces a blast of "cold steam" that penetrates and cleans without back splash or harm to the finish.

The Hydro-Air pressure washer is useful in metal processing, degreasing and paint stripping. Through the use of varying adjustments, the washer can remove heavy dirt and grease, or quickly and thoroughly rinse cleaning solvent from sheets and parts.

Pocket-Size Engineering Slide Rule, Free

The DuBois Co., Industrial Division, Cincinnati 2, Ohio, manufacturer of Klariflant, Filmite and Strypp, spray booth maintenance products, is offering a pocket-size plastic slide rule free to readers of INDUSTRIAL FINISHING.

Engineers, foremen and superintendents find this smooth-working rule handy, convenient, accurate and easy to read. It is especially handy for calculating tank capacities, figuring compound charges and recharges, converting ounces to pounds, ounces to percentages and vice-versa and for multiplication and division problems. It is 1¼-in. wide and slightly more than 6¼-in. long.



Printed directions which explain how to use the rule are included with it.

Industrial FINISHING Editorial

Colors in Style for Spring of 1949

Metal tones, a distinctive group of subtle off-shades, are a significant style feature . . . for the Spring of 1949, according to The Textile Color Card Association, 200 Madison Ave., New York 16, N. Y. Reflecting a decidedly new character, these six smart colors are classic basic shades of light-medium tonality. They comprise Tarnished Gold, a rich burnished version; Bronze Lacquer, an illusive bronzed green; Metal Tan, an unusual tawny shade; Silver Lustre, a cool grey with a soft sheen; Pink Copper, an intriguing rosy rust; and Blue Ore, a misty steel blue. These highly individual metal tones are especially interesting and attractive where they can be used effectively.

Especially appealing in the lighter color register are the flattering Porcelain Pastels, derived from rare and beautiful museum specimens of antique and modern ceramic art. These lovely pastels, while softened in tonality, have a positive character that distinguishes them from the more delicate china tints. Highlighted in this collection are Sevres Blue, Limoages Pink, Aquaglaze, Majolica Yellow, Belleek Beige, Wedgwood Mauve, Faience Green, and Ceramic Coral.

Greens, which are expected to enjoy particularly strong favor, are represented by a fresh-looking medium tone called Pinewood Green, and the lighter harmonizing shade, Hillside Green.

Blues slated to assume a leading position for spring give first place to the lively Promenade Navy and the lighter blending shade of violet cast, Coolblu. Atlantic Sea and Pacific Surf are refreshing ocean blues of greenish tonality.

Striking a gay spirited note are the festive Cruiseway Colors, which include Marine Turquoise, Exotic Lemon, Boating Green, Sailing Red, Gay Cyclamen, Southern Mint, Tropic Tangerine and Windward Blue. This radiant cruise theme has special promotional appeal.

Suggestions for More Smooth Efficiency

More thought and attention should be given to the use of portable equipment to increase shop efficiency and reduce costs. Sometimes, when portable equipment is mentioned, an executive has the impression of something light, flimsy and more or less makeshift. This is often a mistake. Portable equipment can be sturdy and strong.

Let us consider a plant that uses three or more dip-whirl finishing machines, or an equal number of tumbling barrels, and the machines are used intermittently. For instance, suppose one is used only for a black finish; one is for white only; and the others are used either for colors or clear coatings. In most plants, it is unlikely that all of the machines will be used continuously every day.

If these coating machines are spaced properly in the finishing room, two portable conveyorized infra-red ovens will serve three or more machines, depending upon the

QUICK, EASY,
SAFE way to

REMOVE PAINT

-no risk of FIRE!

It's easy to do a quick, clean removing job on any type of finish with SAF-TE Remover. And there's absolutely no risk of fire. . . . *SAF-TE will not burn!* Reduces paint, varnish, enamel, shellac, lacquer, or synthetics to an unresisting sludge that comes off easily. And, since SAF-TE leaves no waxy residue, no *after-wash is needed!*

We have been helping leading industrial firms solve their removing problems for over 30 years. Let us help you with yours. Fill in coupon.

SAF-TE

Non-Burning Remover

WILSON-IMPERIAL COMPANY
125 Chestnut Street, Newark 5, N. J.

WILSON-IMPERIAL COMPANY
125 Chestnut Street, Newark 5, N. J.
We are interested in stripping paint from
_____
Type of Finish_____
Name_____
Company_____
Street_____
City_____State_____

probable use of the machines. Shifting the castered, conveyorized ovens to an area close to the coating machines in use will save operators much time and extra handling. Production will be increased and costs will be reduced, so that the cost of the equipment and the change-over will soon be amortized.

Another example would be where certain items or parts going through the finishing room are suitable for a dip coating. These parts may be hung on the same overhead conveyor used for other cleaning and finishing operations, provided the conveyor has a strategically located section depressed sufficiently to let the parts down into a dip tank. Then a portable dip tank with drain pan attached may be placed under the depressed section of the conveyor. When other work is going through the finishing room, the portable tank may be moved out of the way, and the other parts can follow the usual cleaning and coating operations.

There is one rule that is infallible; you can't make it too convenient for employees to do their work, if you want to gain efficiency, increase production and reduce costs.

One Coat of Finish, Or Two, or Three

Why is it that a certain firm can apply one coat of material on a product and get an entirely satisfactory finish while another company, with identical equipment and a similar product, has to apply two coats of material to obtain a finish of equal merit? On the surface of it, both concerns are equally efficient.

Management, personnel and equipment contribute little toward any difference between the two. The size of the two firms and the volume of production have nothing to do with

VARNISH ★ ENAMELS
LACQUERS ★ SYNTHETICS

TOUSEY

TOUSEY PRODUCTS

DURACOTE for DURABILITY

Supplying a leading group of American Industrial users since 1885

We welcome your inquiries

TOUSEY VARNISH CO.

520 WEST 25TH STREET • CHICAGO 16, ILLINOIS

BEHLEN
A great name for Colors
JAPAN COLORS
SINCE 1888
H. BEHLEN & BRO., INC. 10 CHRISTOPHER STREET—NEW YORK 14, NEW YORK
1749 BERKELEY ST. SANTA MONICA, CAL.

BLANCHIT
(Trade-Mark Reg.)
U. S. and Foreign Patents
WOOD BLEACH
Accepted Standard
For Furniture and Cabinet Makers
Also Interior Woodwork Recoloring
L. R. van Allen Co.
Patent Licensee
CHICAGO 54

the difference. Of course, there is a difference in the cost of producing the two products, a serious difference.

The secret lies in the formulation of the finishing material used by the two companies. Some formulas simply produce better results than others for the particular job—just the same as some employes produce more and better work than others.

Perhaps, to suit an individual case, the number of coats must be advanced to two and possibly three instead of one or two coats, but regardless of the number, the point still remains that correct formulation, which is suited to the particular product and the finish desired, is most important. Perhaps one material will cost more than another, but total cost cannot be measured by the cost per gallon paid for a certain material. The cost of the results you get is the only true yardstick to use.

Adhesion of Paint To Metal, or . . .

★ Webster defines adhesion as "the adhering or sticking together of substances in contact with each other." While this is an accurate definition, it falls short of the connotation the word has for me, as a result of an appreciation of the great role that this characteristic has in the integrity and resistance of paint films.

A coating that is essentially brittle, but which has excellent adhesion, will appear more flexible and will have greater film strength than a more flexible coating that has poor adhesion.

Improvement of the adhesion of a coating—for example, a metal primer by pretreatment of the metal—will result in a film of far superior properties. The increased protection of the metal that follows with better adhesion can be readily proved by salt spray or weatherometer tests.

Qualified paint chemists can formulate coatings that have the best in-

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials, paying for those published.*

gredients for adhesion and metal protection. However, it is up to the industrial user to see that his shop practices, such as metal cleaning and treating, film thickness of coating, baking cycle, etc., are such as to make it possible to get perfect adhesion.—LOUIS E. MARTIN, Chemist.

Sales of Lacquer

The volume of nitrocellulose lacquer sold by manufacturers remains fairly steady; that is, it is reasonably uniform as reported for the 3-month periods of the year, according to "Facts for Industry" published by the Department of Commerce. Total gallons for the second quarter of 1948 are above 17 1/3 million. For the first quarter of 1948, the amount was slightly above 17¼ millions; for the second quarter of 1947, it was between these figures.

Breaking this total (17 1/3 million) down into classifications, it averages about as follows in millions of gallons: Clear lacquers, 4 to 4¼; pigmented lacquers, not quite 5; bases and dopes, more than ¾; thinners 7½. These figures include sales of package goods to jobbers and dealers.

Cool Nights—And Drying Trouble

★ It is significant that finish drying troubles crop up most often in the late spring and early fall. This rule holds true where the finishes are air-dried; not where they are baked, or force-dried along a conveyor. This is especially true of varnishes and varnish-type enamels, but lacquer-type materials may give drying troubles at these seasons too, for the same reason. The explanation is quite simple; cool nights.

At these seasons of the year little or no heat is needed in the finishing

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room during the day. But at night the temperature inside drops, along with the temperature outside. It may drop to the lower sixties, or even to the fifties. At these temperatures the drying processes of evaporation, oxidation, and polymerization are all slowed down almost to a standstill. Resut: Next morning the finish is not dry. It may be too soft to rub or pack, whereas under normal drying conditions it would be in perfect condition.

When you leave the finishing room in the evening, it may be quite warm. When you arrive in the morning, it may be pleasantly cool. Cou don't realize that during the night it was quite chilly. A recording thermometer, left in the finishing department all night, will reveal the whole story. Note that on the nights that the temperature dropped sharply, the finish did not dry so well.

Since many industrial plants have their boilers operating at all seasons of the year, it is usually a simple matter to have a little heat in the finishing department on cool nights. If the foreman will open the steam valve after the day's work is done and close upon arrival in the morning, his drying troubles at these seasons of the year may disappear entirely. Try it.—R. H. WAMPLER.

Organic Acid Booklet

"Organic Acids" is the title of a new booklet just published by Carbide & Carbon Chemicals Corp., 30 E. 42nd St., New York 17, N.Y. It presents in detail the properties, specifications and uses of several synthetic acids, some of which are used in the production of plasticizers and varnish driers. Thirteen charts in the new booklet present such data as physical constants, solubilities, and electrical conductivity. Constant boiling mixtures and a section on specification test methods are also included.

Copies of this booklet (Form 4768-A) may be obtained from any office of C. & C. C. Corp.

Where and How of Wastefulness

★ Most workmen don't mean to be careless or wasteful. When wasteful practices are pointed out, the workmen will usually cooperate to help stop them. Materials and supplies wasted in the finishing department may make a lot of difference in any firm's operating statement. Little waste habits that are common everyday occurrences often escape notice; but an alert foreman can spot them and take corrective action.

Here are a few suggestions: Observe whether workmen drain all of the materias from shipping containers. Shipping drums often come back to the supplier's plant with one to three gallons of perfectly good material left in them.

If the material in a drum must be reduced for application, the drum, when it is almost empty, can be flushed out with the reducing solvent. If the contents of a drum do not need to be reduced, they will drain out clean if the drum is left in a draining position for a few minutes. If the material is sprayed from the drum by means of a pressure pump, make sure that the intake pipe is at the lowest point in the drum.

When you mix up a batch of special material, do you give some careful thought to making up only as much as you will need, with little or nothing left over? Are you careful to salvage odds and ends of left-over materials? You can throw together similar left-over materials and use them at odd places in production, such as on the insides and backs of cabinets, or in places that do not show but which need a protective coating.

Sandpaper and rags are more expensive than most workmen realize. See that each piece is used to the fullest extent before it is discarded. Soiled wiping rags can be laundered.

Watch for waseful practices at the spray booths, especially where operators always seem to have a lot of overspray. The chances are these workers are using too much air pressure.

A rule to follow in spraying is to use as little air pressure as possible,

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and use the smallest possible fluid orifice on the gun. Of course, long lengths of hose, or small diameter hose will cause a loss of pressure between the outlet and the spray gun. Pressure at the spray gun is what counts. To maintain production speed, it may be necessary to boost fluid pressure when changing to a smaller fluid tip on the gun.

What about the use of solvents for washing out containers? A pint of solvent will clean a tank about as well as a gallon. Keep solvent containers covered; solvent will evaporate during hot weather or when it is in or near a heated area.

Why use lacquer thinner to clean a spray gun that has been spraying varnish when mineral spirits, at a fraction of the cost, will do as well? Inspect the various places where solvents are used for cleaning and see if a cheaper solvent won't do just as well.—ROLLIN H. WAMPLER.

"In Case of Fire"

★ The finishing room foreman who places his reliance upon the "in-case-of-fire" directions written upon various equipment, and trusts that his workers will act "right" when a fire strikes—he knows little or nothing of paint fires or human psychology. *The first line of defense in a finishing room against a devastating fire is a group of trained men within the finishing room.* This group should be composed of men who know their specific jobs and are willing to do this job. This first line of defense can hold a fire in check until the arrival of local fire-fighting equipment.

The average worker intent on his job is not conscious of a fire hazard inherent in a spray booth. An educational program of intensive work, but of short duration, with constant check-up can build a consciousness of group action in case of fire.

The most efficient spray room is one in which the workers have been told and trained to do a specific job. These jobs are:

1. Each man must be told which exit to use. This exit must of necessity be the one closest to the worker.
2. Each spray gun operator must be told to cut off all fans immediately upon noticing a fire. He may be forced to leave the booth prior to cutting off the fan, and in such a case he must use the master switch.
3. Specific workers must be trained

to use the carbon dioxide and foam type extinguishers. A specific area should be designated for each extinguisher.

4. One worker must notify the main office of fire immediately. Take no chances here. Remember this is only the first line of defense, but a major skirmish.

5. Other workers must be given specific tasks of clearing the building of personnel and moving inflammable material.

The best defense against a fire is a clean and orderly spray booth. The best way to fight a spray booth fire is by men who know their work, have been trained to do a specific task; and are conscious of the damage a fire can do to the Company, and their jobs.—LEWIS FLETCHER.

Standard for Copper Naphthenate Wood Preservative

The National Bureau of Standards announces the establishment of Copper Naphthenate Wood-Preservative (spray, brush, dip application) Commercial Standard CS152-48.

The purpose of the commercial standard is to provide a nationally recognized specification for copper naphthenate wood-preservative for the guidance of buyers, sellers and testing laboratories; to promote fair competition and consumer confidence in products conforming to the standard; and to provide a basis for labeling and guaranteeing the quality of the product. The standard covers physical and chemical characteristics and methods of test of copper naphthenate products supplied in either concentrated or ready-for-use form.

Printed copies of Commercial Standard CS152-48 will be available as soon as practicable. Until that time, mimeographed copies can be obtained from the Commodity Standards Divisions, National Bureau of Standards, Washington, D. C.

National Safety Exposition

The 36th National Safety Congress and Exposition, sponsored by the National Safety Council, will be held in Chicago from October 18 through October 22. For further information, write to George E. Burns, National Safety Council, 20 N. Wacker Drive, Chicago 6, Ill.

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Paint Spray Booth Maintenance

The DuBois Co., Cincinnati 3, Ohio, has prepared a portfolio on the subject of paint spray booth maintenance. Included are vital and important facts about keeping wet spray booths operating at maximum efficiency, plus interesting articles entitled "Operating Suggestions for Water Curtain Spray Booths," "Conditioning the Water for Wet Spray Booths," and "To Operate and Clean Wet Spray Booths."

Also included in the folio is a report prepared for a large automobile manufacturer, giving the correct operating procedure for spray booths. This procedure is useful to anyone who operates a spray booth, because it will serve as a guide to stimulate his own thinking on the subject.

The literature includes answers to such questions as: why chemical compounds are used in the water of wet spray booth, because it will serve as a guide drain out all water and replace it with renewed charge, how to know if the treated water is right.

The complete portfolio can be obtained by writing to the Industrial Division of The DuBois Co., Cincinnati 3, Ohio.

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